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THE ARCHITECTS' JOURNAL



standard contents

every issue does not necessarily contain all these contents but they are the regular features which continually recur

NEWS and COMMENT
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The Industry
PHYSICAL PLANNING SUPPLEMENT
CURRENT BUILDINGS
HOUSING STATISTICS
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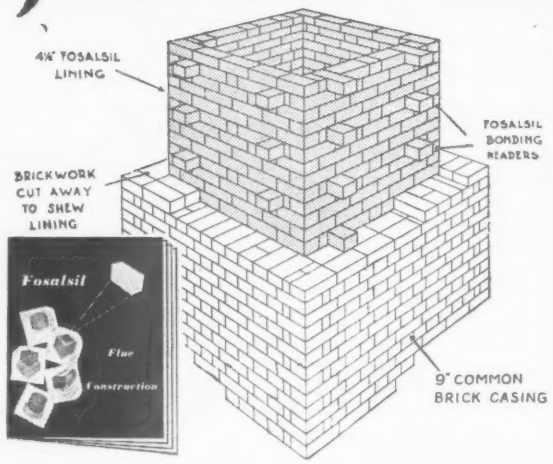
★ A glossary of abbreviations of Government Departments and Societies and Committees of all kinds, together with their full address and telephone numbers. The glossary is published in two parts—A to Ie one week, Ig to Z the next. In all cases where the town is not mentioned the word LONDON is implicit in the address.

IGE	Institution of Gas Engineers. 17, Grosvenor Crescent, S.W.1.	Sloane 8266
IHVE	Institution of Heating and Ventilating Engineers. 49, Cadogan Square.	Sloane 1601/3158
IIBDID	Incorporated Institute of British Decorators and Interior Designers. Drayton House, Gordon Street, W.C.1.	Euston 2450
ILA	Institute of Landscape Architects. 12, Gower Street, W.C.1.	Museum 1783
I of Arb	Institute of Arbitrators. 35/37, Hastings House, 10, Norfolk Street, Strand, W.C.2.	Temple Bar 4071
IOB	Institute of Builders. 48, Bedford Square, W.C.1.	Museum 7197/5176
IR	Institute of Refrigeration. Dalmeny House, Monument Street, E.C.3.	Avenue 6851
IRA	Institute of Registered Architects. 47, Victoria Street, S.W.1.	Abbey 6172
ISE	Institution of Structural Engineers. 11, Upper Belgrave Street, S.W.1.	Sloane 7128
IWA	Inland Waterways Association. 14, Great James' Street, W.C.2.	Chancery 7718
LDA	Lead Development Association. Eagle House, Jermyn Street, S.W.1.	Whitehall 7264/4175
LMBA	London Master Builders' Association. 47, Bedford Square, W.C.1.	Museum 3891
LSPC	Lead Sheet and Pipe Council. Eagle House, Jermyn Street, S.W.1.	Whitehall 7264/4175
MARS	Modern Architectural Research Group (English Branch of CIAM). Secretary: Trevor Dannatt, 6, Fitzroy Square, W.1.	Euston 7171
MOA	Ministry of Agriculture and Fisheries. 55, Whitehall, S.W.1.	Whitehall 3400
MOE	Ministry of Education. Curzon Street House, Curzon Street, W.1.	Mayfair 9400
MOH	Ministry of Health. 23, Savile Row, W.1.	Regent 8411
MOHLG	Ministry of Housing and Local Government. Whitehall, S.W.1.	Whitehall 4300
MOLNS	Ministry of Labour and National Service. 8, St. James' Square, S.W.1.	Whitehall 6200
MOS	Ministry of Supply. Shell Mex House, Victoria Embankment, W.C.	Gerrard 6933
MOT	Ministry of Transport. Berkeley Square House, Berkeley Square, W.1.	Mayfair 9494
MOW	Ministry of Works. Lambeth Bridge House, S.E.1.	Reliance 7611
NAMMC	Natural Asphalte Mine-Owners and Manufacturers Council. 94-98, Petty France, S.W.1.	Abbey 1010
NAS	National Association of Shopfitters. 9, Victoria Street, S.W.1.	Abbey 4813
NBR	National Buildings Record. 31, Chester Terrace, Regent's Park, N.W.1.	Welbeck 0619
NCBMP	National Council of Building Material Producers. 10, Storey's Gate, S.W.1.	Abbey 5111
NFBTE	National Federation of Building Trades Employers. 82, New Cavendish Street, W.1.	Langham 4041/4054
NFBTO	National Federation of Building Trades Operatives. Federal House, Cedars Road, Clapham, S.W.4.	Macaulay 4451
NFHS	National Federation of Housing Societies. 13, Suffolk St., S.W.1.	Whitehall 1693
NHBRC	National House Builders Registration Council. 82, New Cavendish Street, W.1.	Langham 4341
NPL	National Physical Laboratory. Head Office, Teddington.	Molesey 1380
NSA	National Sawmilling Association. 14, New Bridge Street, E.C.4.	City 1476
NSAS	National Smoke Abatement Society. Chandos House, Buckingham Gate, S.W.1.	Abbey 1359
NT	National Trust for Places of Historic Interest or Natural Beauty. 42, Queen Anne's Gate, S.W.1.	Whitehall 0211
PEP	Political and Economic Planning. 16, Queen Anne's Gate, S.W.1.	Whitehall 7245
RCA	Reinforced Concrete Association. 94, Petty France, S.W.1.	Abbey 4504
RIAS	Royal Incorporation of Architects in Scotland. 15, Rutland Square, Edinburgh.	Fountainbridge 7631
RIBA	Royal Institute of British Architects. 66, Portland Place, W.1.	Langham 5721
RICS	Royal Institution of Chartered Surveyors. 12, Great George St., S.W.1.	Whitehall 5322/9242
RFAC	Royal Fine Art Commission. 22A, Queen Anne's Gate, S.W.1.	Whitehall 3935
RS	Royal Society. Burlington House, Piccadilly, W.1.	Regent 3335
RSA	Royal Society of Arts. 6, John Adam Street, W.C.2.	Trafalgar 2366
RSI	Royal Sanitary Institute. 90, Buckingham Palace Road, S.W.1.	Sloane 5134
RIB	Rural Industries Bureau. 35, Camp Road, Wimbledon, S.W.19.	Wimbledon 5101
SBPM	Society of British Paint Manufacturers. Grosvenor Gardens House, Grosvenor Gardens, S.W.1.	Victoria 2186
SCR	Society for Cultural Relations with the USSR. 14, Kensington Square, London, W 8.	Western 1571
SE	Society of Engineers. 17, Victoria Street, Westminster, S.W.1.	Abbey 7244
SFMA	School Furniture Manufacturers' Association. 30, Cornhill, London, E.C.3.	Mansion House 3921
SIA	Structural Insulation Association. 32, Queen Anne Street, W.1.	Langham 7616
SNHTPC	Scottish National Housing. Town Planning Council. Hon. Sec., Robert Pollock, Town Clerk, Rutherglen.	
SPAB	Society for the Protection of Ancient Buildings. 55, Great Ormond Street, W.C.1.	Holborn 2646
TCPA	Town and Country Planning Association. 28, King Street, Covent Garden, W.C.2.	Temple Bar 5006
TDA	Timber Development Association. 21, College Hill, E.C.4.	City 4771
TPI	Town Planning Institute. 18, Ashley Place, S.W.1.	Victoria 8815
TTF	Timber Trades Federation. 75, Cannon Street, E.C.4.	City 5051
WDC	War Damage Commission. 6, Carlton House Terrace, S.W.1.	Whitehall 4341
ZDA	Zinc Development Association. Lincoln House, Turl Street, Oxford	Oxford 47988

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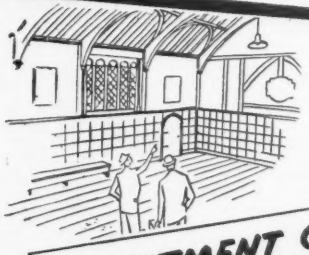
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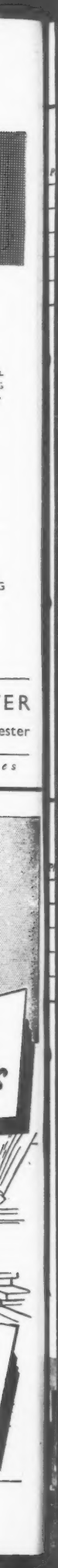
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NUMBER 3

TRUSSED CONCRETE **Review**

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TWO MULTI-STOREY BLOCKS OF LONDON FLATS

PRIORY COURT

County Borough of East Ham

Jt: E. Austin, M.B.E., F.S.I.A., *Chief Housing Officer*
C. H. Doody, A.R.I.B.A., Dip.T.P., *Architect in charge*

FROM THE six hundred flats projects in which this Company has been concerned in the last four years we have selected this and Beehive Court, Ilford (see page 3) as of special interest

Accommodation

The building was the first multi-storey block of flats designed by the Borough. It housed double the number of families feasible with lateral two and three storey development, while leaving the 3½ acre site substantially clear for gardens and playgrounds.

The Y plan was adopted after scientifically proving it to allow the occupants the maximum sunshine throughout the year. The block contains eight communal spaces and ninety-six flats —twenty-one with three bedrooms (854 square feet) and seventy-five with two bedrooms (69 square feet). Access balconies serving individual upper flats are reached by two lifts and five staircases.

The reinforced concrete structure

The block was completely framed, with 5" solid slab floors throughout, continuous over spine beams and columns. Effective resistance to wind pressure on external wall faces was achieved by including some reinforced concrete cross walls, designed as vertical cantilevers: a system one might describe as orthodox framing with an admixture of "eggbox" construction. These walls, 4½" thick, were single at the extreme ends of the building, and in pairs forming party walls, one

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NUMBER 1

TRUSSED CONCRETE **Review**

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LIVERPOOL UNIVERSITY MEDICAL SCHOOL Architects, Messrs. Weightman and Bullen

A coalition of prestressed and reinforced concrete

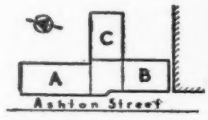
THE FIRST SECTION of the new Medical School for Liverpool University was originally designed by the Architects, Messrs. Weightman and Bullen, as a steel framed structure with two-way Truscon *in situ* floors. But when R.I.B.A. problems arose, we were asked to put forward a reinforced concrete scheme which would follow the original layout, cost no more, and show a big saving in steel.

The basic conditions governing the design

As originally designed the structure and width of wings A and B differed from wing C.

A and B were to be spanned by steel lattice girders whose bottom chords raked upward to the stanchion connections at each end. A Hy-Rib ceiling was to conceal services threading the lattices, and by following the raking contour allow the maximum daylight to enter classrooms,

Scheme model (by courtesy of the Architects, Messrs. Weightman and Bullen) and key plan to layout



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NUMBER 2

TRUSSED C

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L. W. Abed, B.Arch., A.R.I.B.A., *Architect in charge of contract*

THESE EXAMPLES from recent industrial buildings of our construction include an apt use of reinforced concrete shell roofing to the main production areas.

The needs which this form of construction can

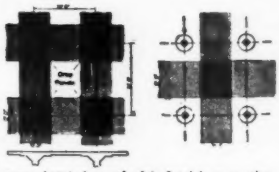
is still loose. A diagram will be found on page 2, showing the family as we see it today.

The prevailing type

Much published matter on shells has pi
occupied itself with the unusual and mathema
cal. This particular REVIEW aims to present so
more general aspects of the shell-type most li
to be of current concern to the architect: the
valence of the "long cylindrical barrel" dec
it to qualify.

Stevenage standard factory No. 1 (The Bay Tree Press)





TOP: *A typical example of the flat slab construction*
ABOVE: *The two zones of a flat slab panel*
Left: Column strips—the primary
Right: Middle strips—the secondary



ABOVE: *Part of the Diagrid roof. Note the precast decking being laid, and the designed camber perceptible at the ridge in the unladen bay*
BELOW: *Part of the upper storey roofed with northlight, steel Diagrid*



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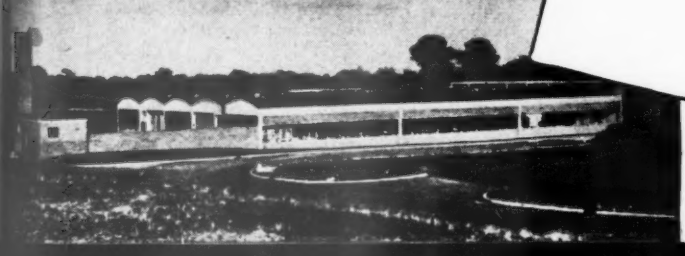
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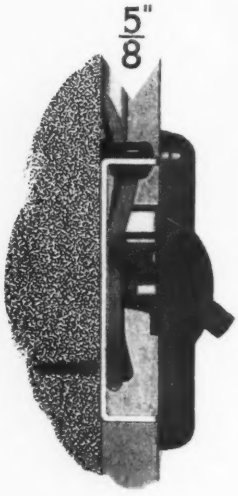
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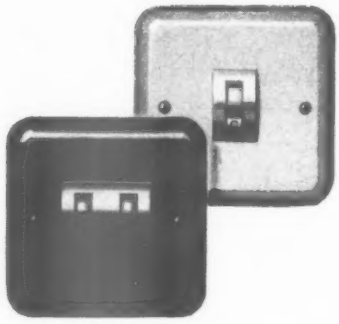
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* *British Standard Code of Practice CP 211 (1949).*—
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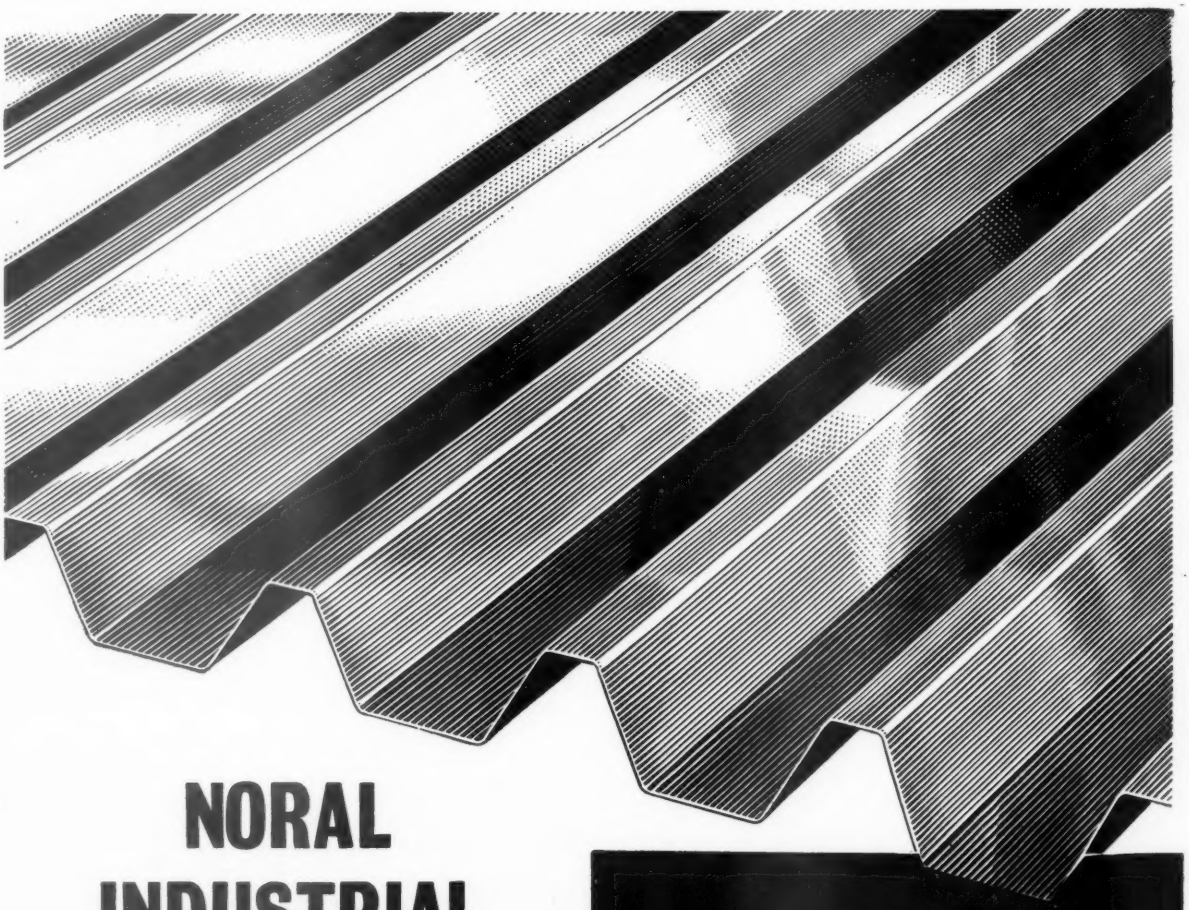


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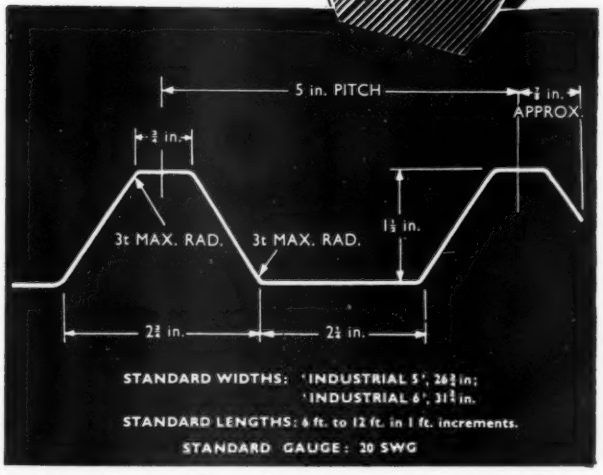
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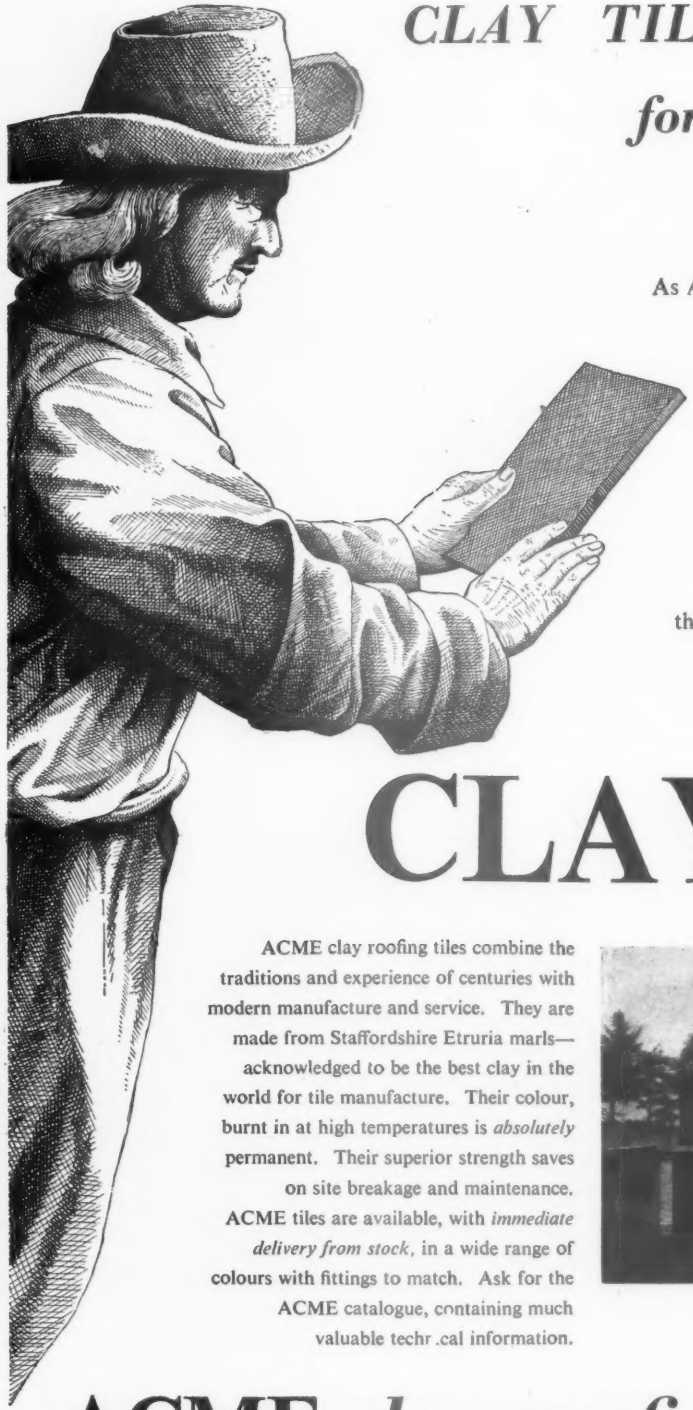
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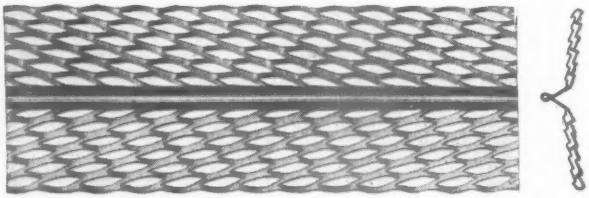
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Made from tight coat galvanised steel, Expanded Metal Screed Bead is designed to provide an economical and practical division between different types of plaster finishes often applied to the walls of bathrooms, kitchens and lavatories.

When this practical Screed Bead is used to form a skirting for rooms with a concrete floor, the cement finish of the floor is brought up to the underside of the nose and the plaster of the wall brought down to the top side of the nose. A projection or quirk may be left if desired or the two finishes made flush. The metal nose gives valuable protection at the edge.

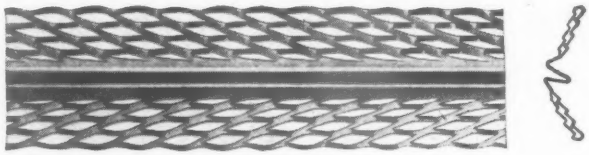
"Expamet" Screed Bead is obtainable in standard lengths of 10′ or in other lengths up to 10′ if required.



2

CONCEALED PICTURE RAIL

The Expanded Metal Picture Rail can be fixed by the plasterer and used as a screed for ruling off the plaster. It is embedded in the plaster finish, leaving a slot round the wall at the height of a picture rail for the insertion of picture hooks; it can also be papered over if desired and the paper pierced for the picture hook.



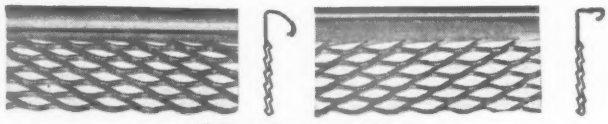
3

ROUND NOSE AND SQUARE NOSE CASING BEAD

"Expamet" round-nose or square-nose casing bead eliminates timber trim architraves for door and window opening, recesses, etc. It provides a perfect finish for the plaster right up to the opening.

Attractive in appearance and fully fireproof this casing bead gives greater protection for the finished plaster, will not warp or swell and provides a non-projecting finish which is easily cleaned and will not collect dust.

"Expamet" Casing Bead is cheaper than timber; it costs less to erect, as it can be fixed by the plasterer — a joiner does not have to follow him to fit timber architraves. It is obtainable in standard lengths of 7′, 8′, 9′ and 10′ and in other lengths under 10′ if required.



All illustrations are reduced in size.

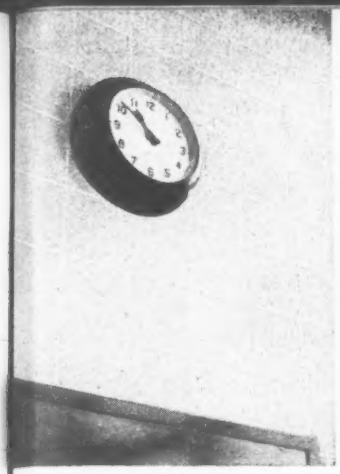
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Expanded Metal Products

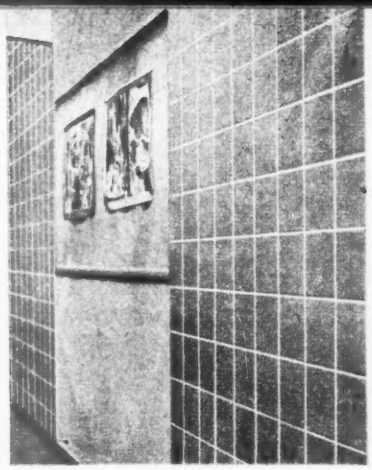
BEADS FOR PLASTERWORK

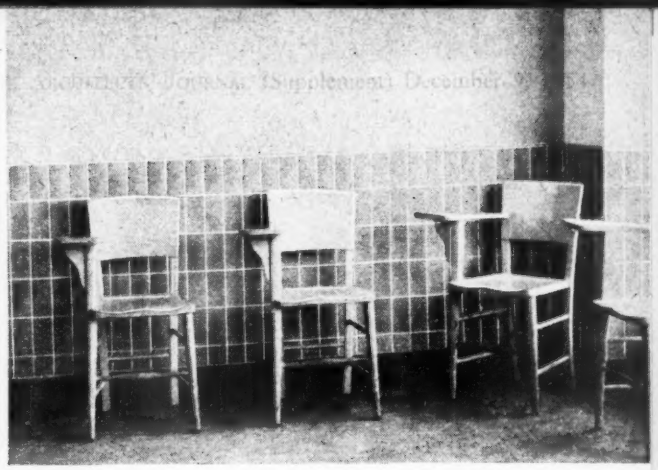
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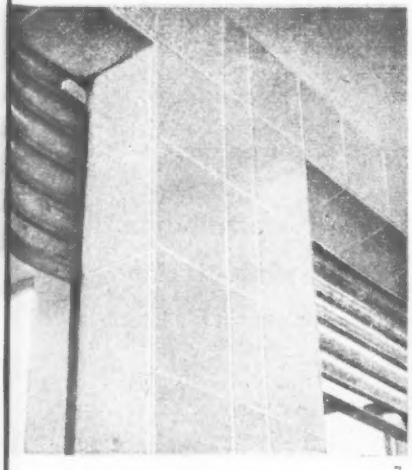






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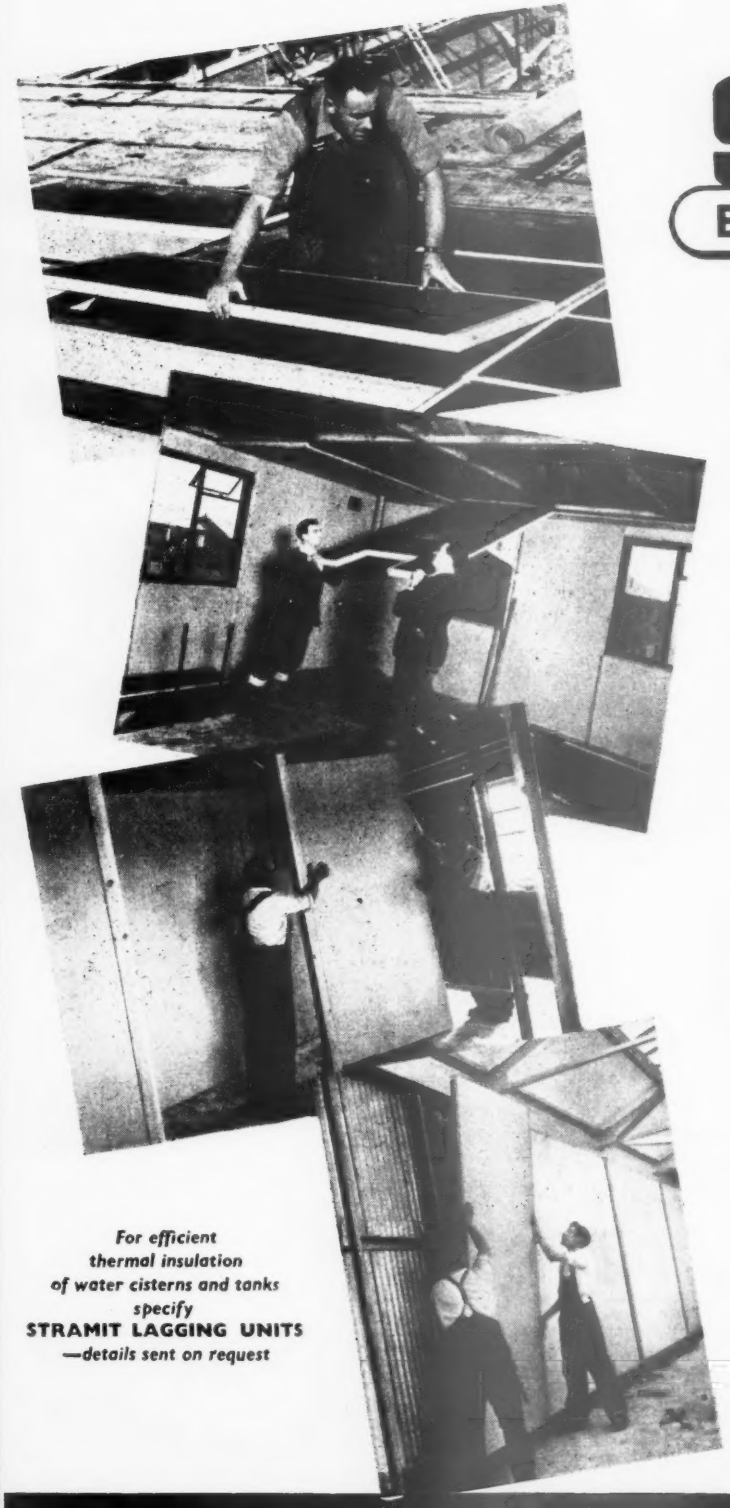
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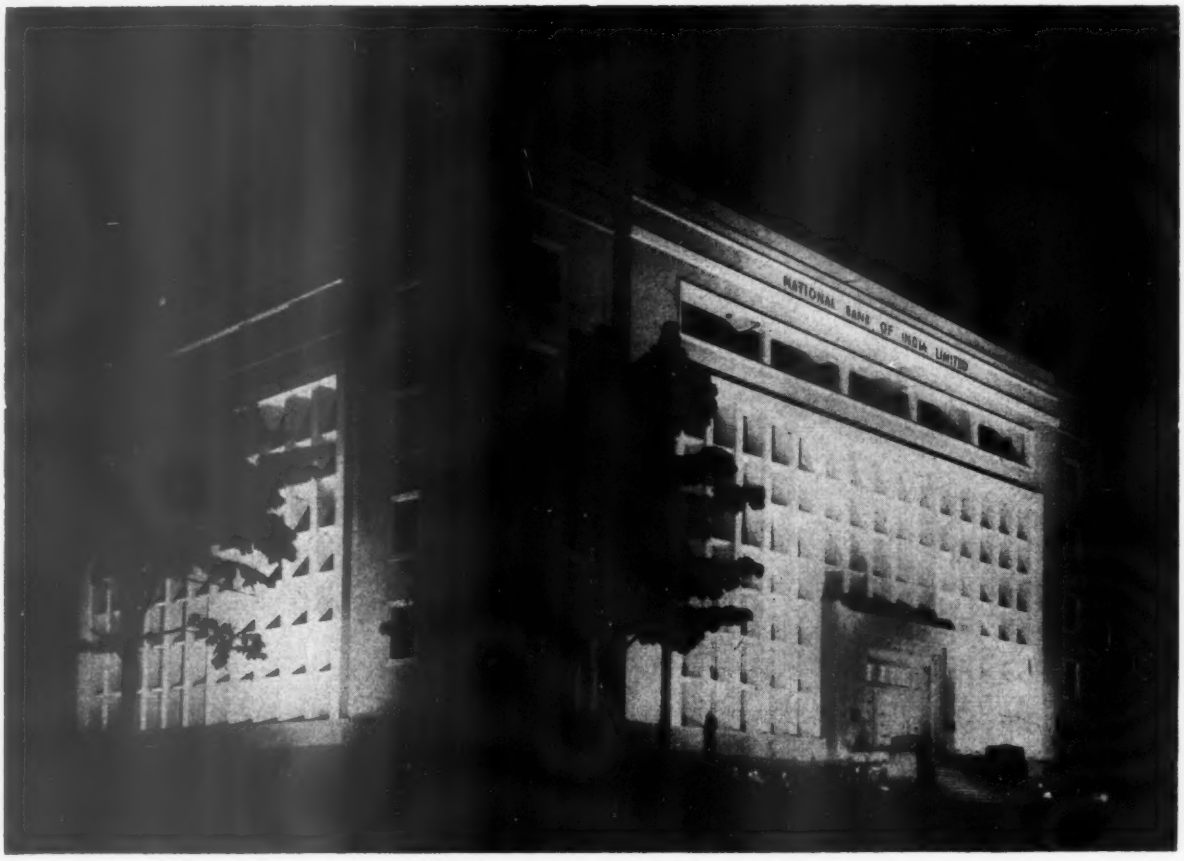
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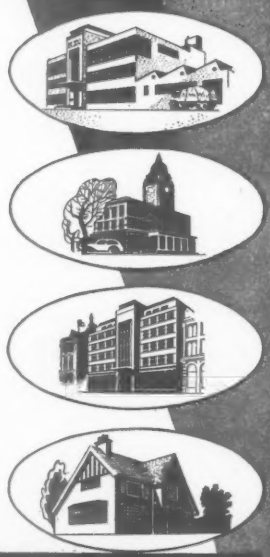
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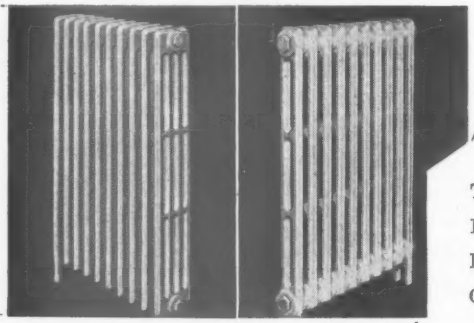
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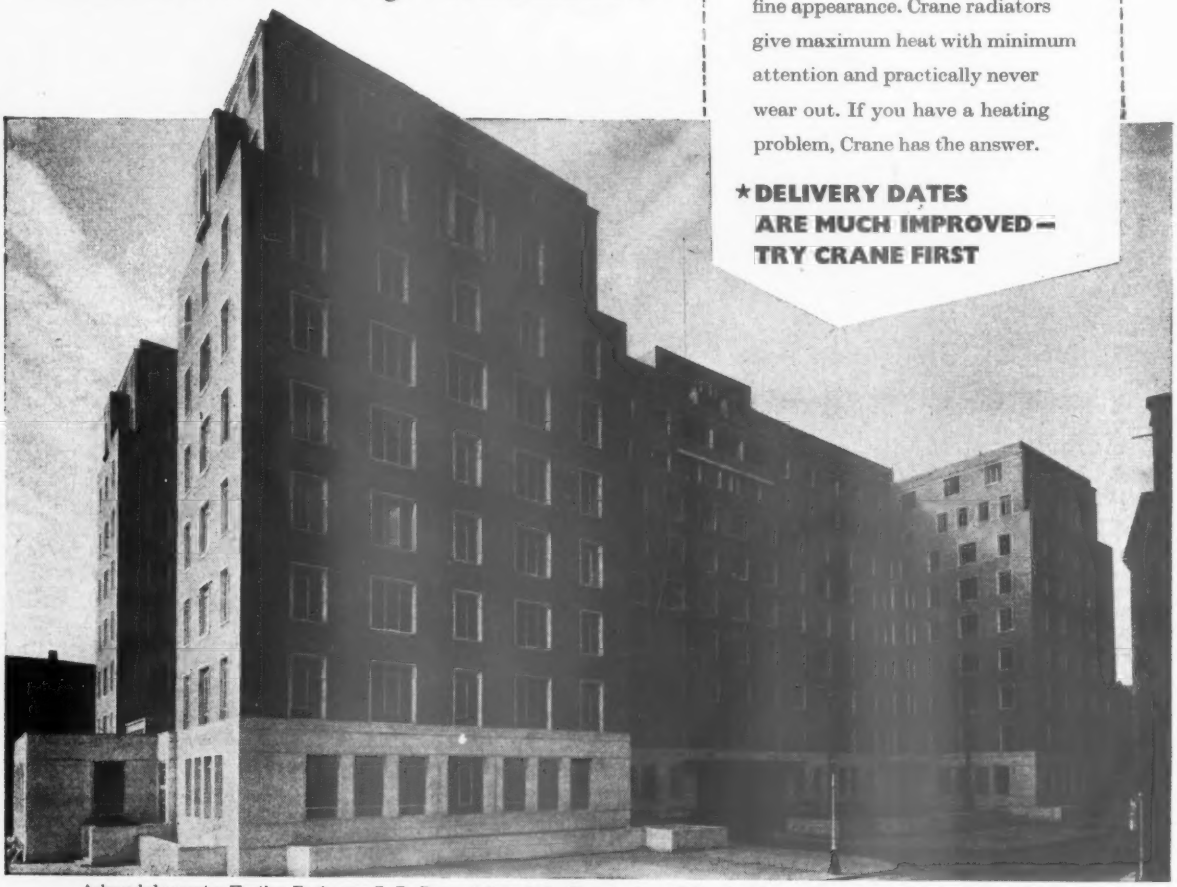
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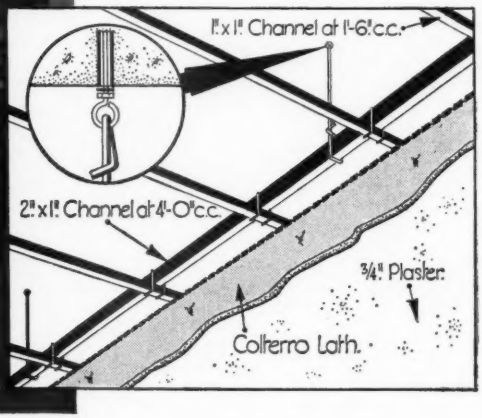
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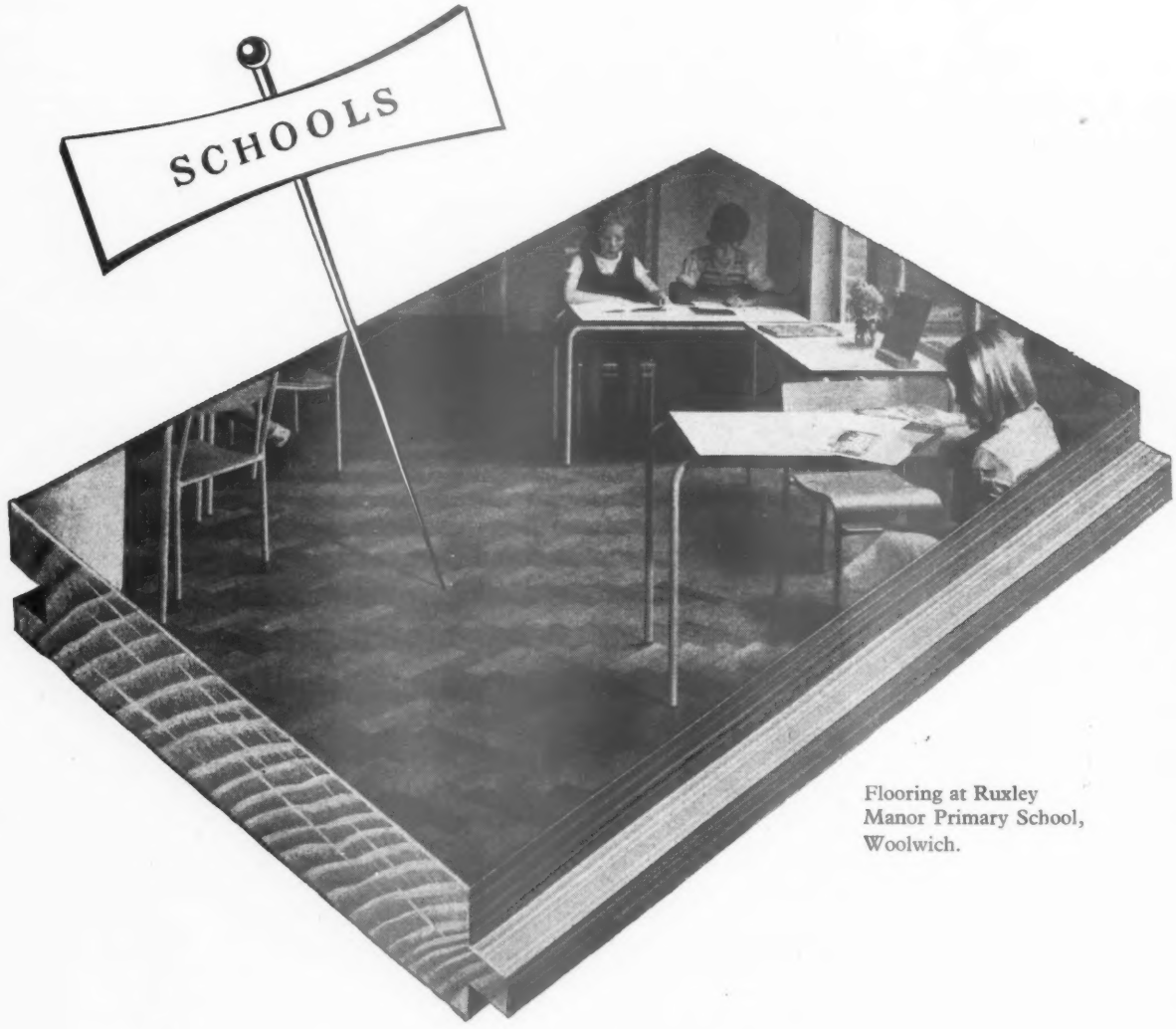
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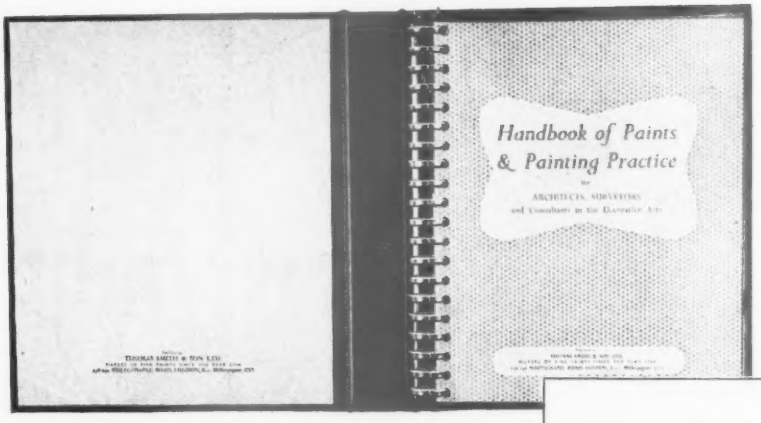
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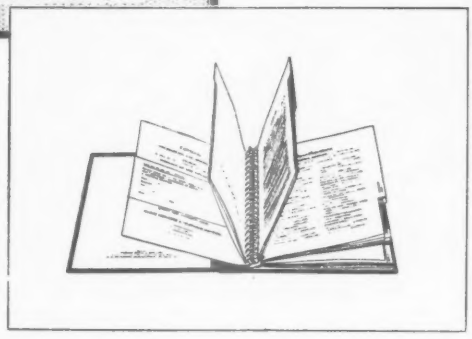
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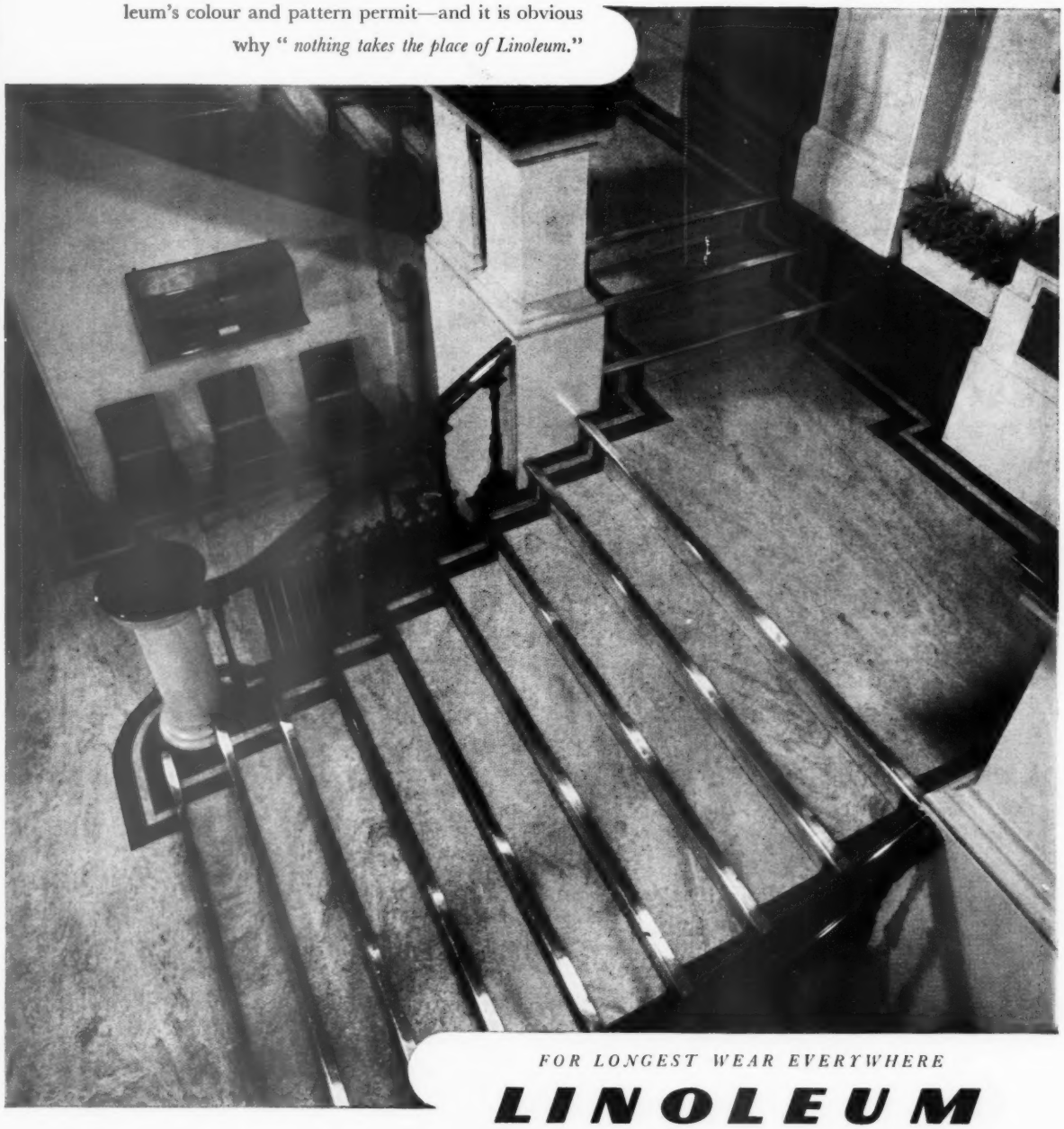
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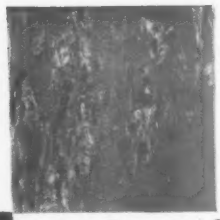
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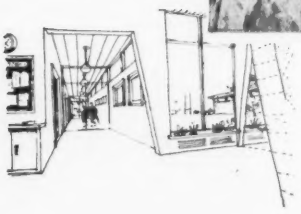








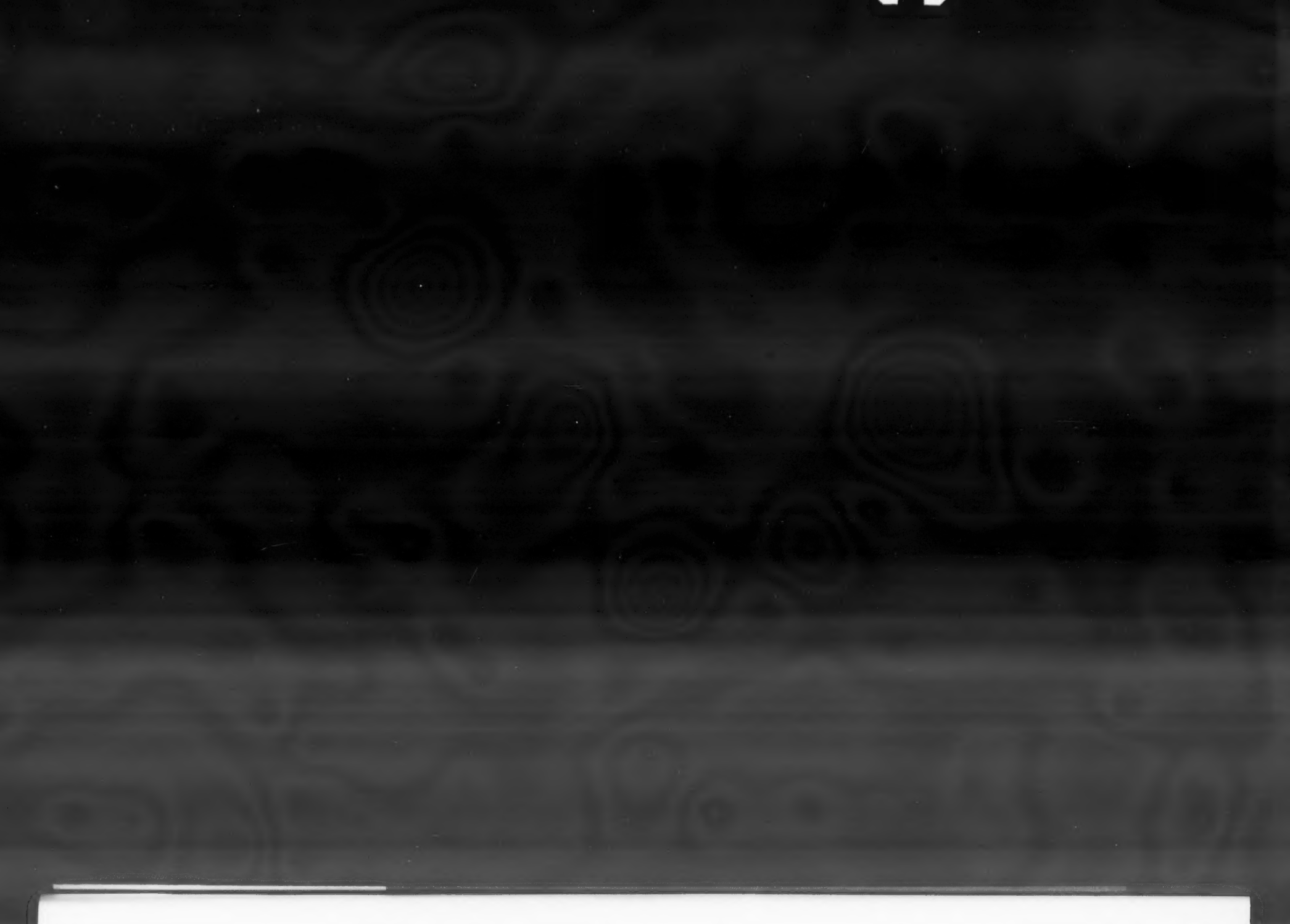




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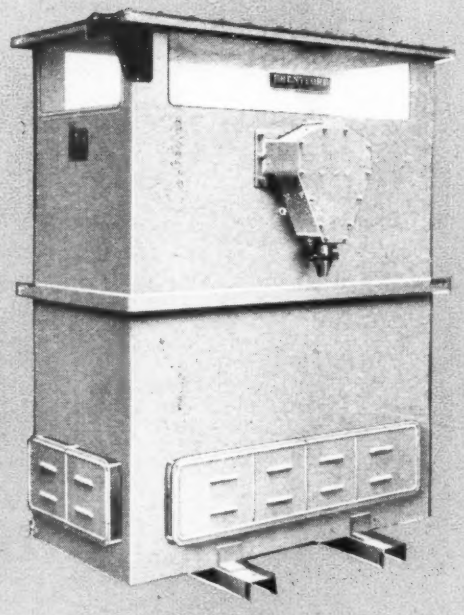
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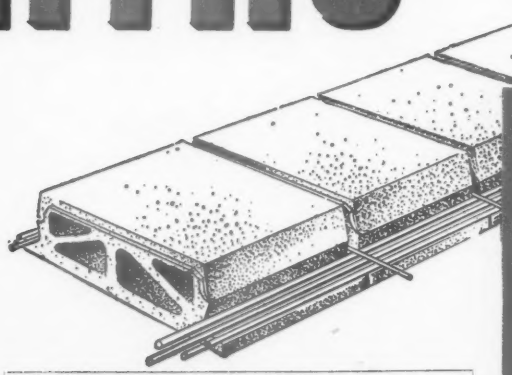
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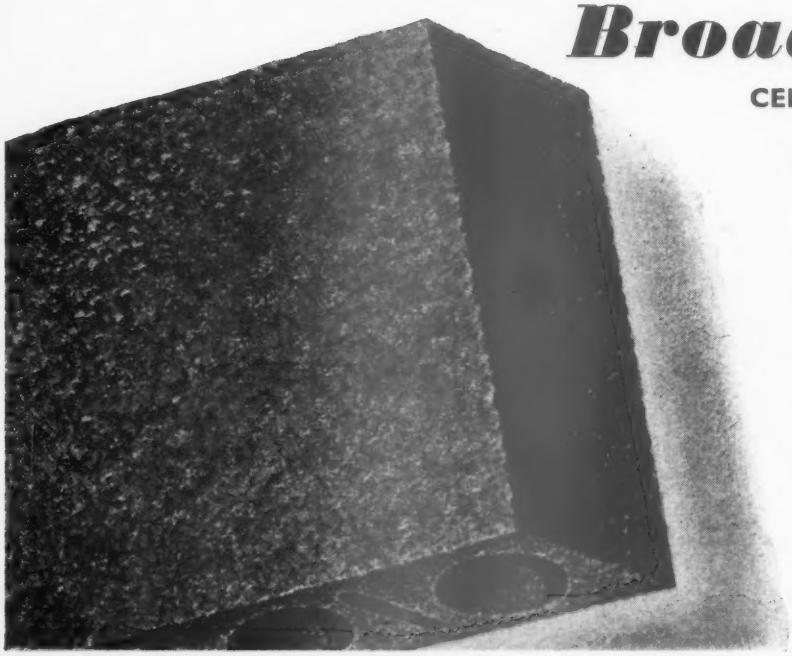
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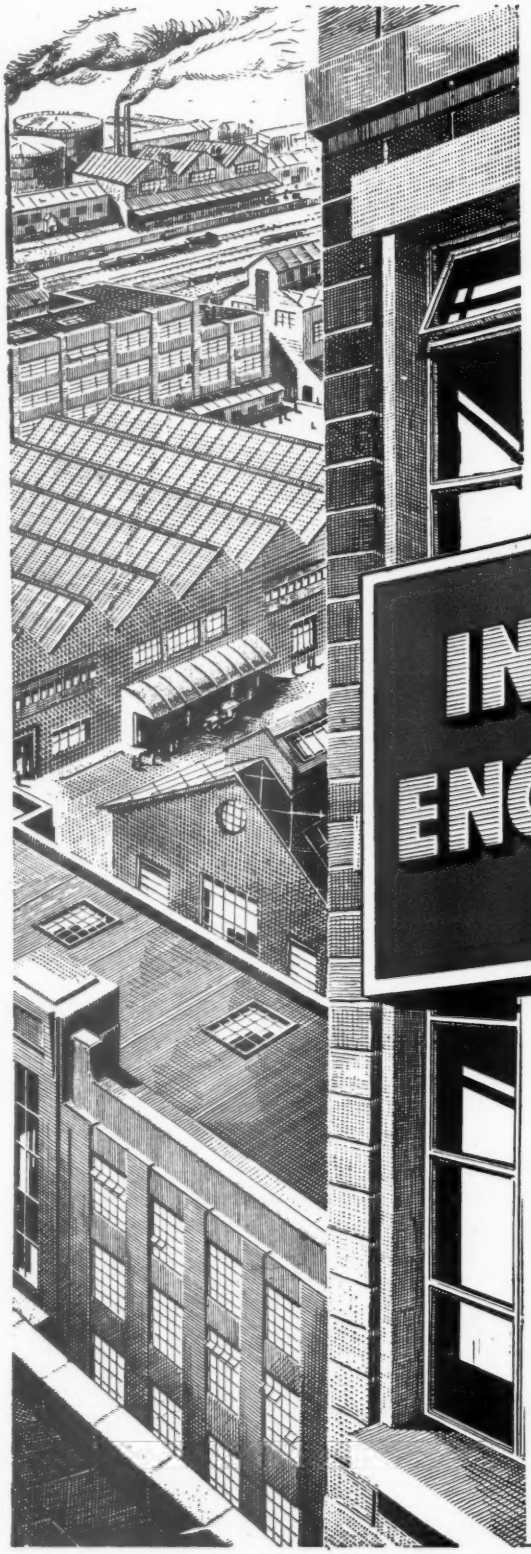
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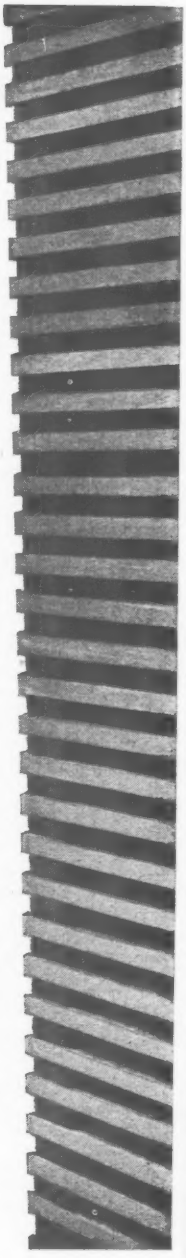
British Railways, Government Departments, Nationalised Industries, principal Industrial Undertakings and Factories, and Architects enjoy the co-operation of Industrial Engineering Limited, who are pleased to survey and estimate throughout Great Britain, without cost, for the repair, reconstruction and waterproofing of industrial roofs by the MASTICON Process.

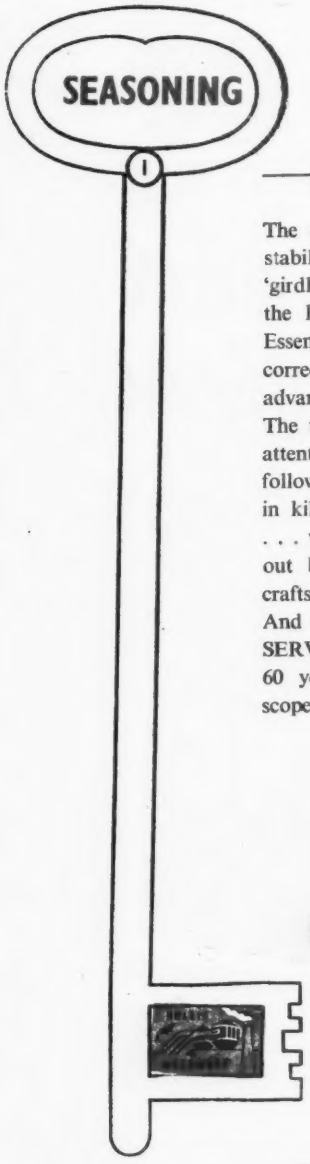
Head Office :
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Flooring 'Standards' by **HOLLIS**

WOOD BLOCK · HARDWOOD STRIP · PARQUET FLOORS



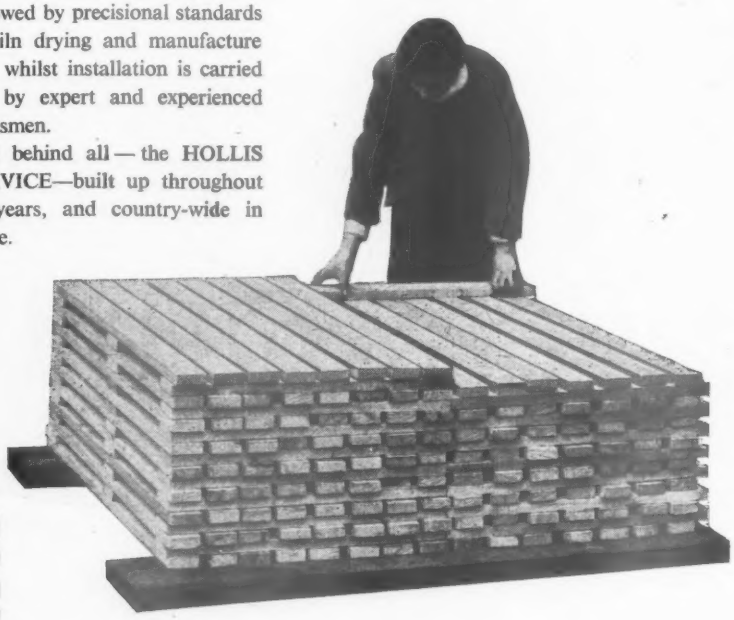


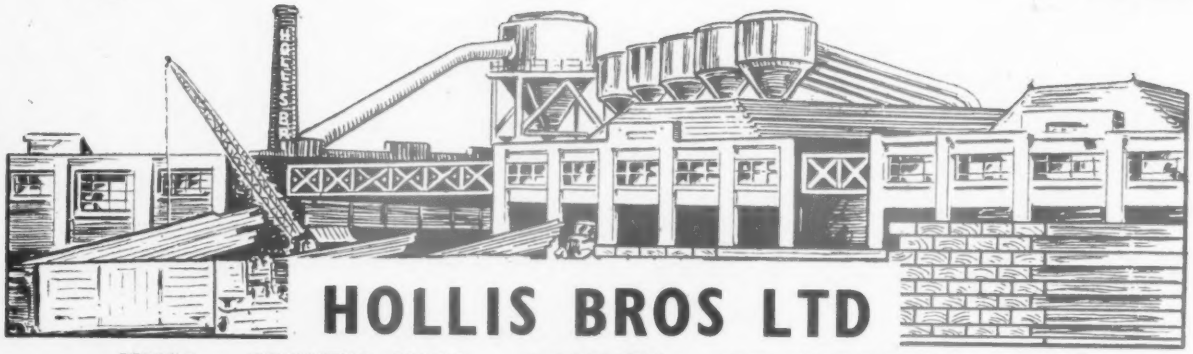
—*the key to stability in timber*

The stability of a building depends on its foundations—the stability of timber, upon seasoning. It may commence by 'girdling' standing trees. It may continue to a small degree in the log, but most important is seasoning after conversion Essential requirements for this are—solid foundations to piles, correct 'stickers' and careful building of stacks, to take advantage of drying winds.

The timber for HOLLIS floors is given the most meticulous attention at this initial stage. It is followed by precisional standards in kiln drying and manufacture . . . whilst installation is carried out by expert and experienced craftsmen.

And behind all — the HOLLIS SERVICE—built up throughout 60 years, and country-wide in scope.





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Approved contractors for **SEMASTIC** decorative tiles *(Product of a Dunlop Company)*

T.A. 454

It remains to be seen!



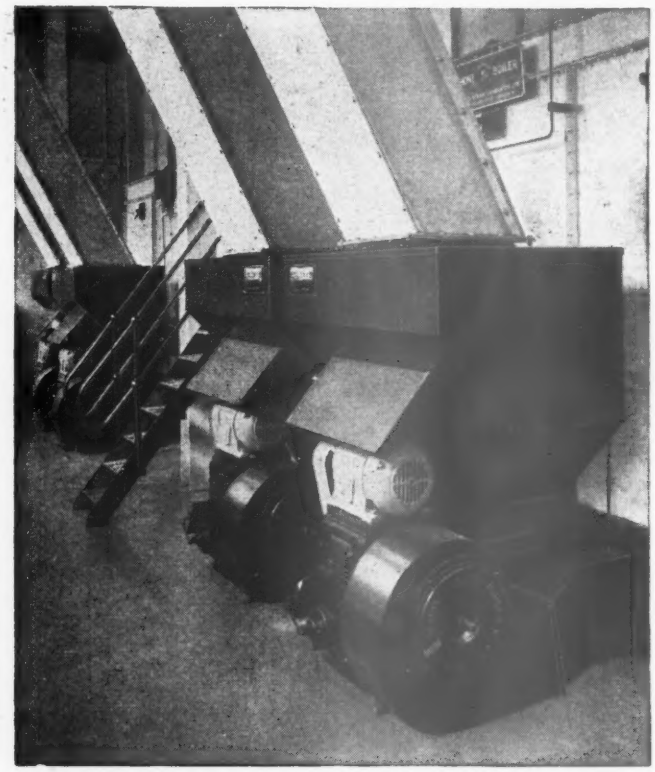
The rest of a building may be rejuvenated from time to time, if desired, but the roof must rely on the inherent qualities of the material with which it is clothed.

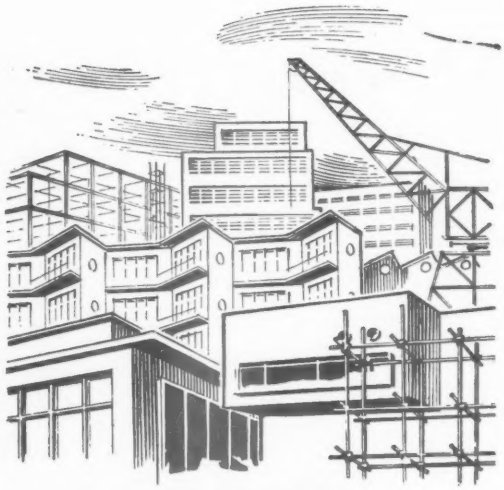
It warrants—

Clay Roofing Tiles

"The Clay Tile Bulletin", post free on request.
Issued by The National Federation of Clay Industries, Drayton House, W.C.1.

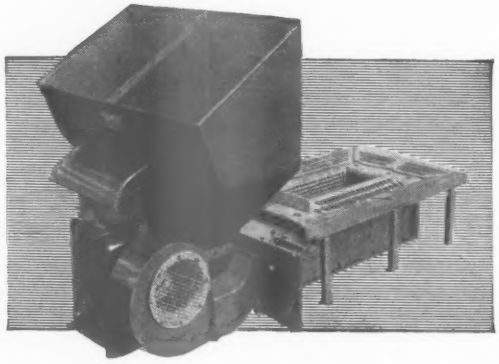
Fuel saving in the NEW TOWNS





with RILEY Robot Stokers

Just one of Riley's contributions to fuel economy in the New Towns: No. 12 Robot Stokers at the APV Company's Crawley factory. Two pairs of stokers each fire two 18,000,000 BTU La Mont high pressure hot water boilers for factory heating.



- *Smokeless combustion with bituminous coal.*
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Modern Drainage Practice

See The Building Research Station Digest No. 67

Are you marching with the times

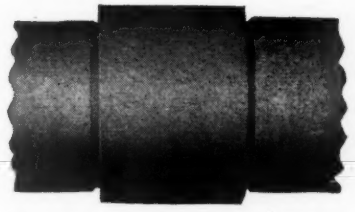
Have you heard of pitch fibre drain pipes which are non-corrodible and root proof; supplied in long lengths with water-tight, machine-tapered, driven joints; tough, resilient and durable - and require no pointing or concrete

Are you aware that:

Such material and methods have been in use on the North American Continent for over forty years. Pitch fibre pipes for drainage and electrical conduits are now manufactured in England. A drainage line can be laid and jointed at the rate of 100ft. in 15 minutes. Pitch fibre can be sawn with ease and, where necessary, joints hand-tooled on site.

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The Key Engineering Company Limited.





Tested by the Building Research Station to the American Bureau of Standard Specification.
Sole agents for Great Britain & Eire: Messrs. Richard Keeping Ltd, 4 Lloyds Avenue, London, E.C.3.

KEY

THE KEY ENGINEERING CO. LTD., 4 Newgate Street, E.C.1

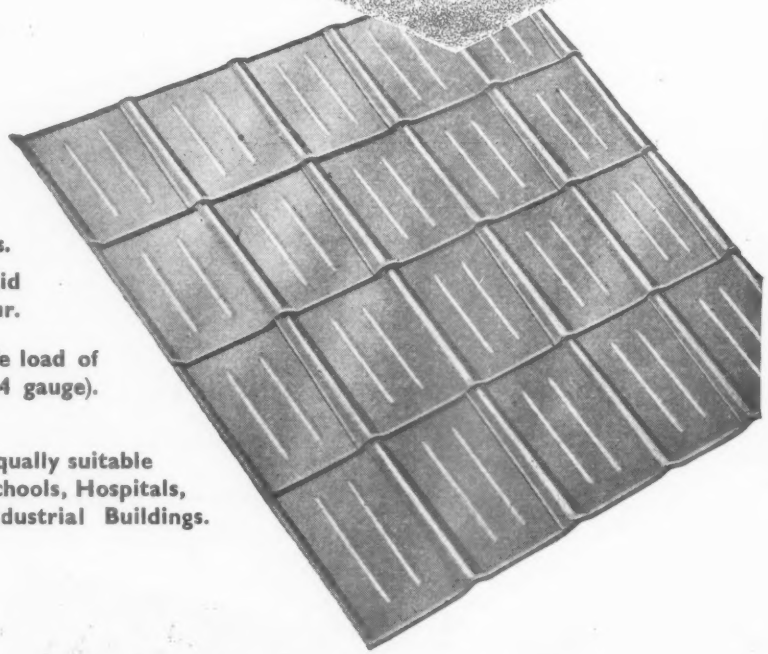
Telephone: City 1185-6-7 **also at Trafford Park, Manchester, 17** **Telephone: Trafford Park 1903**

DH3/12

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your building programme should include

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- First Class Appearance.
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- Easily and rapidly laid with minimum labour.
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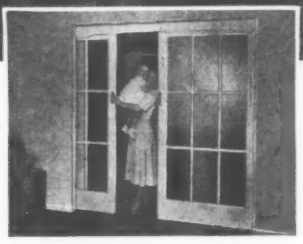
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Prefatile

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ELLARD

ESTATE SLIDING DOOR GEAR

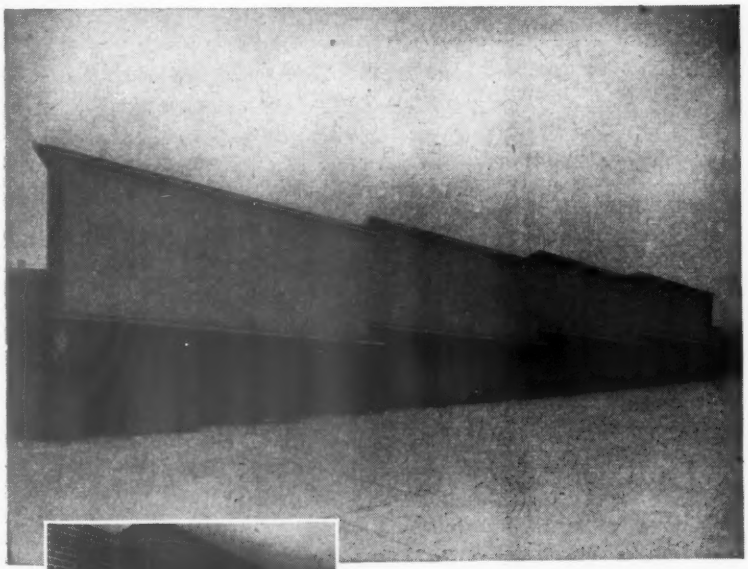
The illustrations above and on left show yet another example of the use of ELLARD "Estate" Sliding Door Gear in the modern dwelling house. See how simple it is to convert a spacious room to one of a cosy intimate atmosphere. The fingertip smoothness of door action offers immediate reduction of living space when desired with the additional advantage of fuel economy. Elegant appearance, ease of operation and long service are the main selling features of this attractive ELLARD Door Gear. Excellent design, moderate cost and maximum use of floor space make ELLARD Door Gear the obvious choice for both council estates and private houses.

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ELLARD

RADIAL SLIDING DOOR GEAR

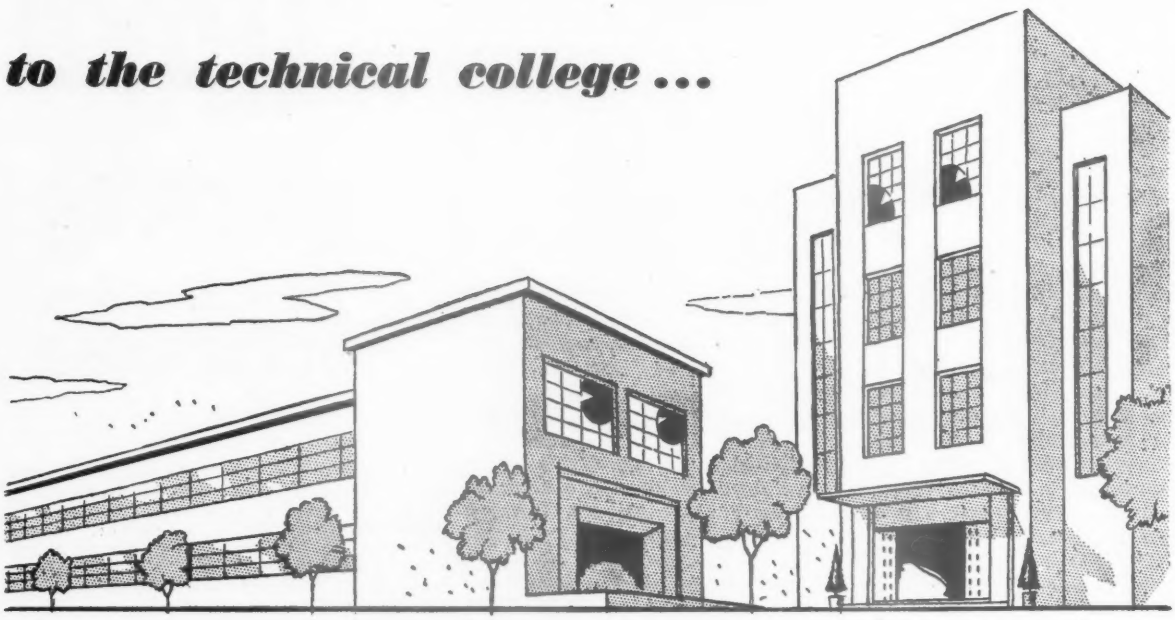
The illustrations above and on left are two examples of ELLARD "Radial" Door Gear fitted to garages on a housing estate. The lower picture shows part of a range of thirty-six garages built in rows one above the other on what was once a hillside. This group of garages adjoins a council housing estate, and provides convenient and moderately priced garage accommodation for tenants. This scheme admirably suits smaller dwelling house estates and offers a profitable return as investment. Specify ELLARD "Radial" Sliding Door Gear for all round excellence of design, moderate cost and prompt delivery.

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BMJ

as the block of flats said to the technical college ...



FLATS Don't look now, but do you know that the hospital up the road has leaky windows — and it hasn't been up three years !

TECH Is that a fact ?

FLATS One of my tenants went to see a patient there, and she says there are stains and rust marks dribbling down the walls.

TECH My dear, how disgusting. And in a hospital, too ! Didn't the builders know about Arbomast B.1 ? All my four hundred windows are bedded in Arbomast B.1 and glazed with Arbolite Metal Casement Putty, and I've never had a leak anywhere.

FLATS You talk as though glass and metal were the only glazing problem. What about buildings like me, where metal windows are set in beautiful wood frames ? I tell you, I'd have had a packet of trouble if my windows were not bedded and caulked with Arbomast B.1.

TECH Oh, I grant you both are excellent. But surely every builder in the land uses one or the other, these days.

FLATS You'd be suprised how many still try and get by with ordinary putty. Well, look at the hospital.

TECH My architect would never have allowed that !

ARBOMAST B1

is the modern mastic based on a blend of drying and non-drying oils reinforced with absorbent fillers and fibres. It has great powers of adhesion, and forms an absolutely watertight seal. Arbomast B.1 never bleeds into surrounding building material.

ARBOLITE

is THE Metal Casement Putty for bonding metal to glass. It has proved itself the ideal glazing putty on many of the largest building contracts. Arbolite has exceptional keying properties and forms a tight, tough joint which adds years to the life of metal windows.

both are made only by

ADSHEAD RATCLIFFE
AND COMPANY LIMITED - BELPER
DERBY Tel. Belper 351/2

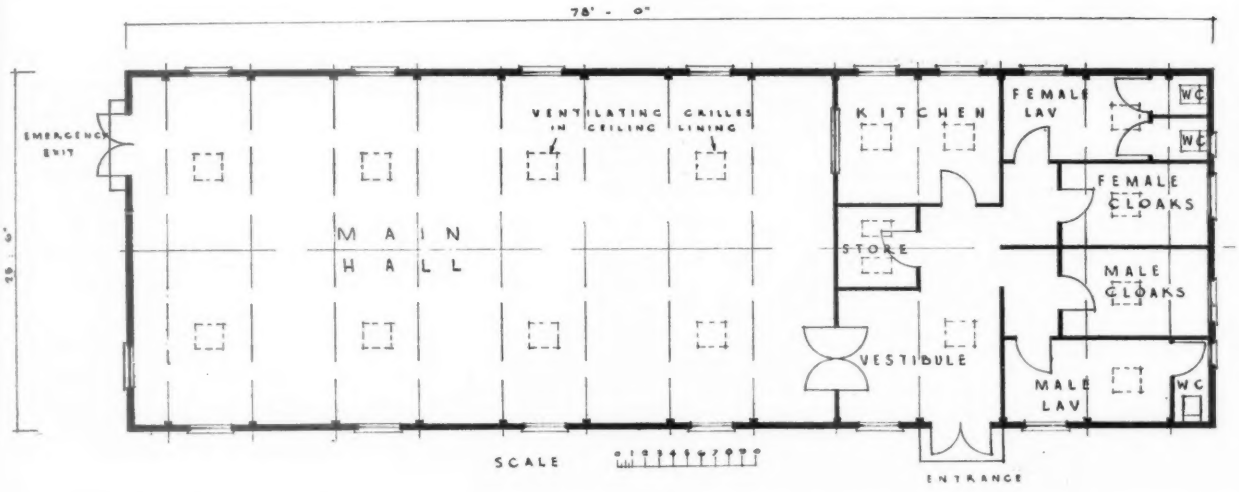
• *Full descriptive literature on request.*

"T-PANEL" SYSTEM OF BUILDING CONSTRUCTION

typified in a

NURSES' RECREATION ROOM for YEOVIL GENERAL HOSPITAL

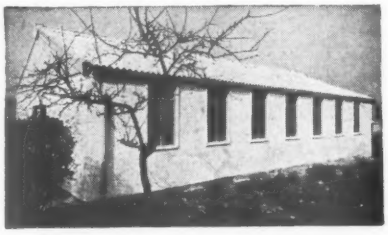
Architects: PETTER, WARREN and ROYDON COOPER, FF.R.I.B.A.
Internal Finishings by MESSRS. BISS & MOYLE, Builders and Contractors, Yeovil.



The Nurses' Recreation Room illustrates one of the many purposes efficiently fulfilled by this rapid and economical system of construction for single storey work. The clean, practical, dry-built structure was erected by one of the Woolaway building teams in ten working days (excluding the internal finishings).

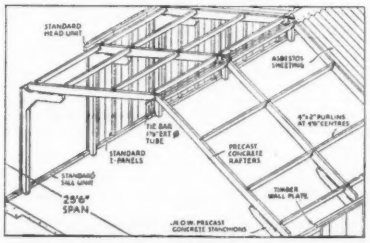
The building is well lit, well insulated and keenly priced. Overall dimensions are 78ft. long, 25ft. 6in. wide and 8ft. 6in. to eaves.





The range of precast concrete units forming the "T-Panel" System is designed to provide buildings of two heights, 6ft. 8in. or 8ft. 6in., and of five widths, 9ft., 12ft., 16ft. 6in., 18ft. and 25ft. 6in. The length can be varied in multiples of 1ft. 6in. This system of construction will therefore fit the space requirements of a wide range of single-storey buildings, such as workshops, stores, offices, class rooms, small halls, and of garages, whether single or in batteries. The "T-Panel" System permits rapid dry construction at economical cost. The wall construction uses the patented "T-Panel", which is made of slightly aerated concrete to give high impermeability, light weight and good thermal insulation. The booklet describing the "T-Panel" System is available on request from the manufacturers.

Woolaway are able to supply and erect complete "T-Panel" System buildings anywhere in England and Wales and are always glad to send quotations and information.



British Patents Nos. 636,686, 631,227 and 679,510. Patents granted and pending in many countries overseas

Please write to the Specifications Dept.,

WOOLAWAY CONSTRUCTIONS LIMITED

Head & Registered Office
11 CANON STREET, TAUNTON, SOMERSET
Telephone: TAUNTON 4496.

Works at Bridport, Dorset and Pontyclun, Glam.

W.6.



COPPER outside

From roofing to plumbing, copper when used in the right way offers advantages in all branches of building. The Copper Development Association is a non-trading organization which exists to give advice and help free of charge—either at the planning stage or during construction. Let the C.D.A. help copper to help you.

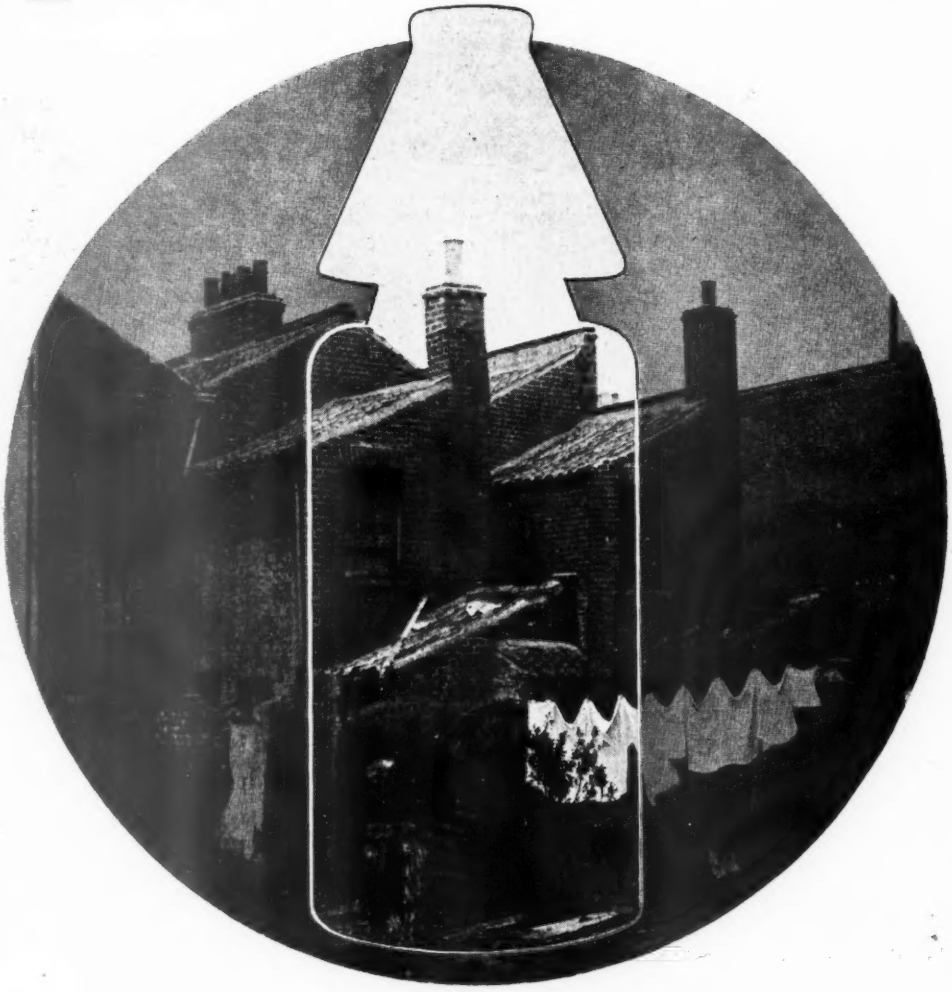


COPPER inside

First ask the C.D.A.

COPPER DEVELOPMENT ASSOCIATION · KENDALS HALL · RADLETT · HERTS · RADLETT 5616

Operation Rescue



and ASCOT

Since one of the important objectives of Operation Rescue is the provision of a hot water supply, the merits of the Ascot system will come under review when plans for improvement or conversion are considered.

It will be found in many cases that the most economical and efficient method of providing hot water will be an Ascot — a multipoint, a bath water heater, or a sink water heater, or perhaps a combination of the last two.

Ascot heaters are, for the service they give, inexpensive to buy. Often they are cheaper to install than some other popular systems because the pipe runs are simple.

They do not burn raw coal, which is in the interests of the householder, his neighbours, and the whole nation.

Because they heat only the water actually required Ascots are economical in use.

Finally, and really most important, they give the householder a first-class hot water service from which he and his family can get piping hot water instantly day or night in an endless flow. Only of an instantaneous gas water heater can it be said that

It never runs cold

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STANDARD ASPHALTS



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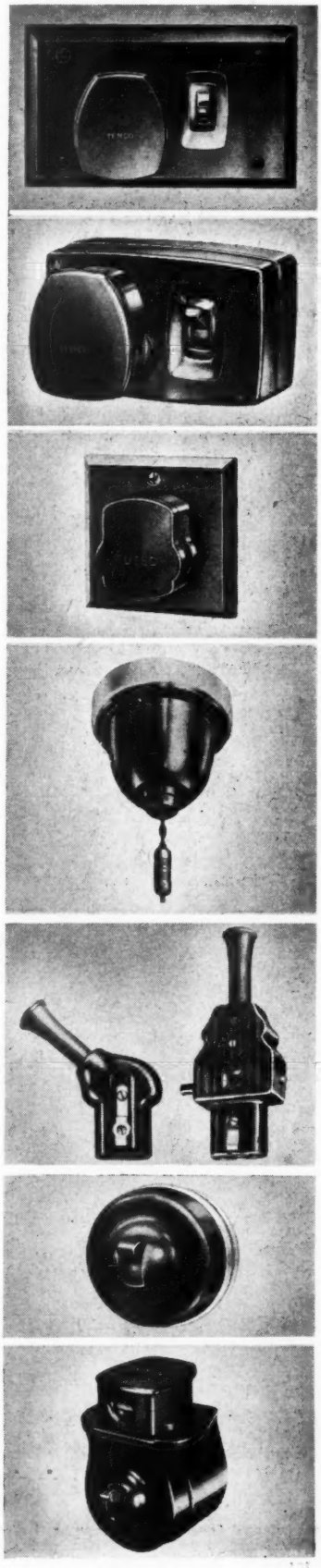
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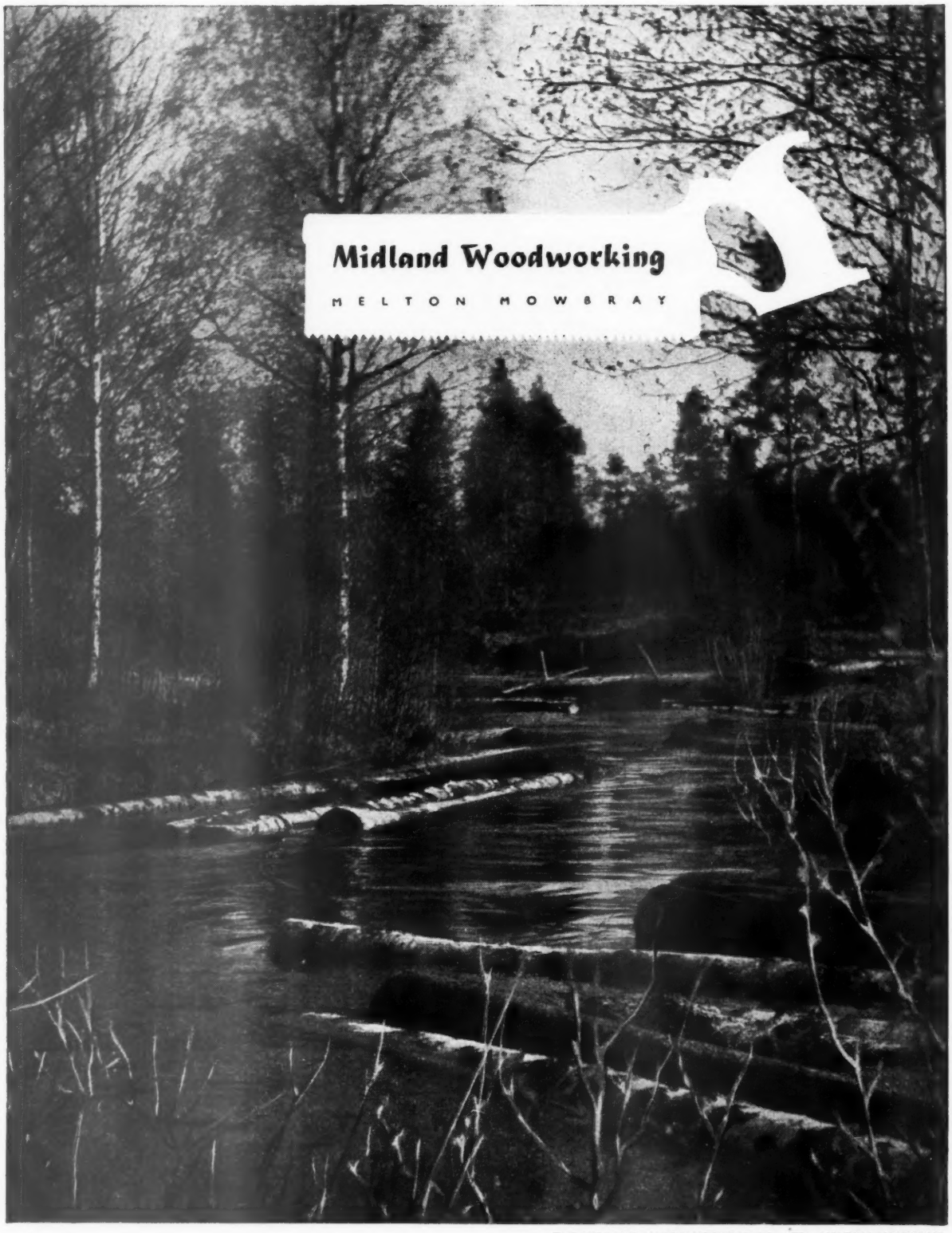
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Here is the highest quality rubber flooring obtainable, so robust that it will give years of service in office, home, hospital or school. Attractive, hygienic, easy to clean, **MOULDEX** Hard Rubber Flooring is made on an entirely new American principle and has a high degree of surface resilience graduating down to a hard base, thus ensuring both silence in walking and easy laying. It is supplied in continuous lengths 36" wide, or in tiles 12" square, in thicknesses of 1/8" and 3/16".

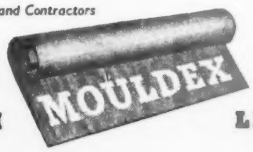
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the most popular type of flooring in the U.S.A.

MOULDEX JOINTLESS FLOORINGS
high grade rubber incorporating marble, cork or stone chippings.

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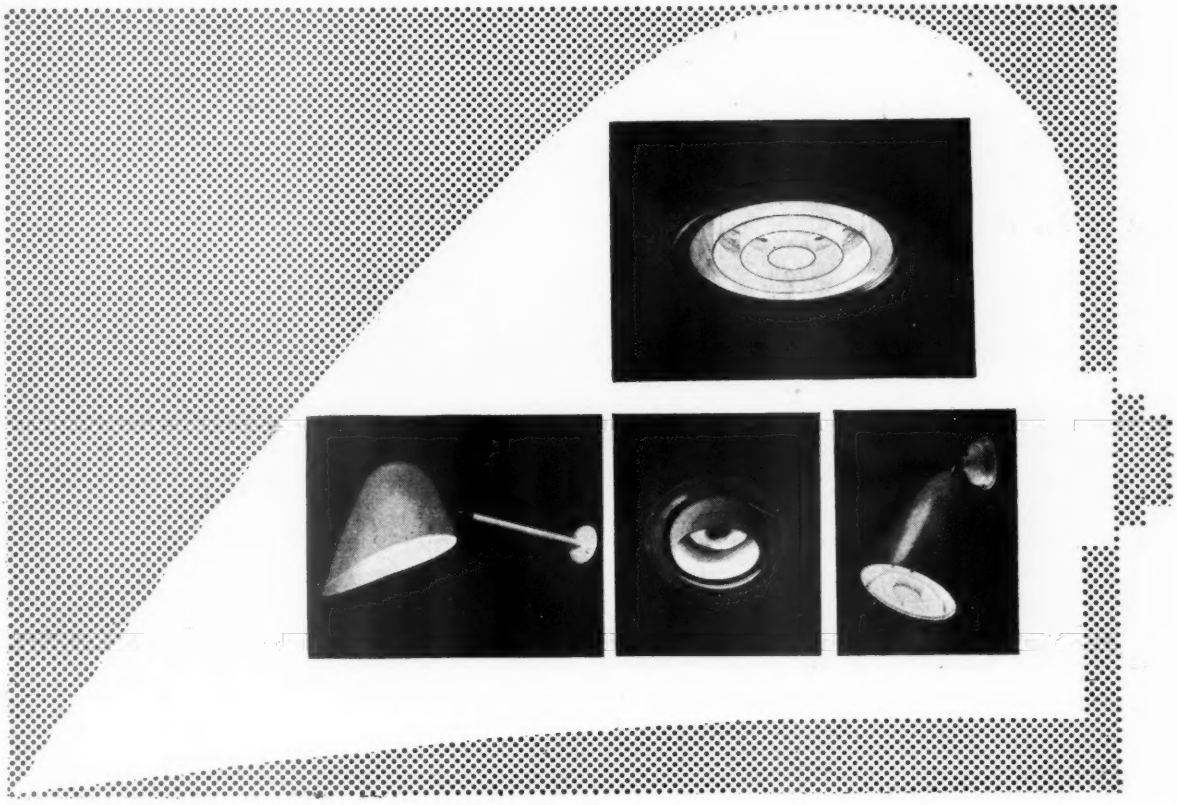


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In our standard range are various types and styles of fittings specially designed for all forms of display lighting. Our technical staff are available to collaborate with you on all aspects of lighting and can always advise on the best fitting or layout for display purposes.



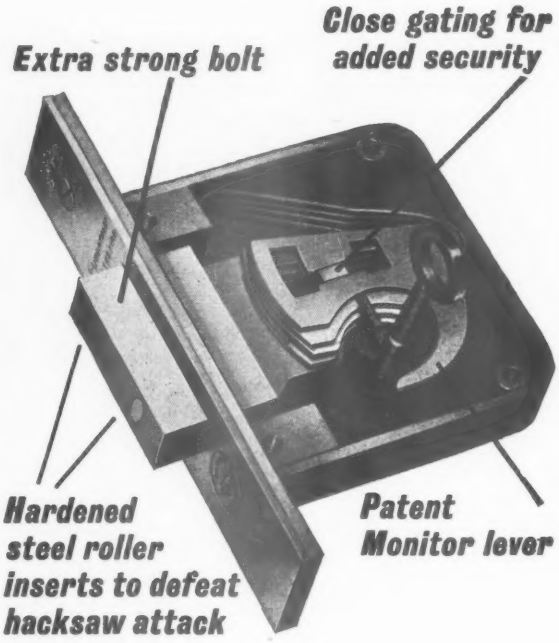
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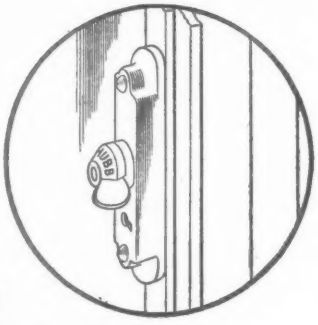
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JUST AN ITEM. But it can make all the difference to your client—between security, for instance, and serious loss. Most people come to us in the end—it may be too late—for a lock they can rely on. Because Chubb locks are the outcome of a policy of continuous research to ensure the utmost security. So if you are tempted to make small economies by using weak, anonymous locks on back and front doors, please think again, and think of Chubb.

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A recent example of our policy which may be useful to you is a simple lock for securing metal-framed windows. Please ask our representative to call and give you details of these and other Chubb security devices.



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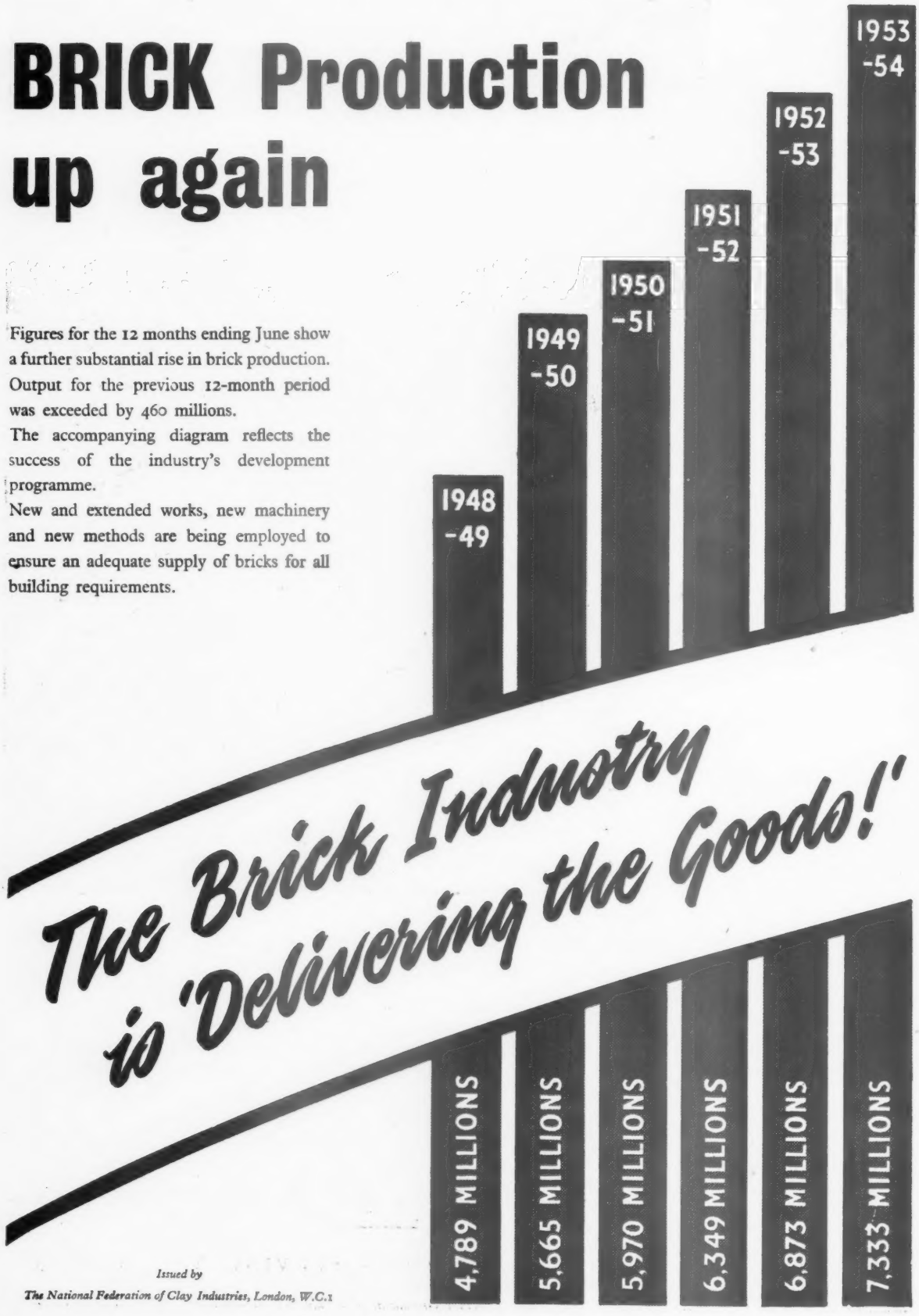
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BRICK Production up again

Figures for the 12 months ending June show a further substantial rise in brick production. Output for the previous 12-month period was exceeded by 460 millions.

The accompanying diagram reflects the success of the industry's development programme.

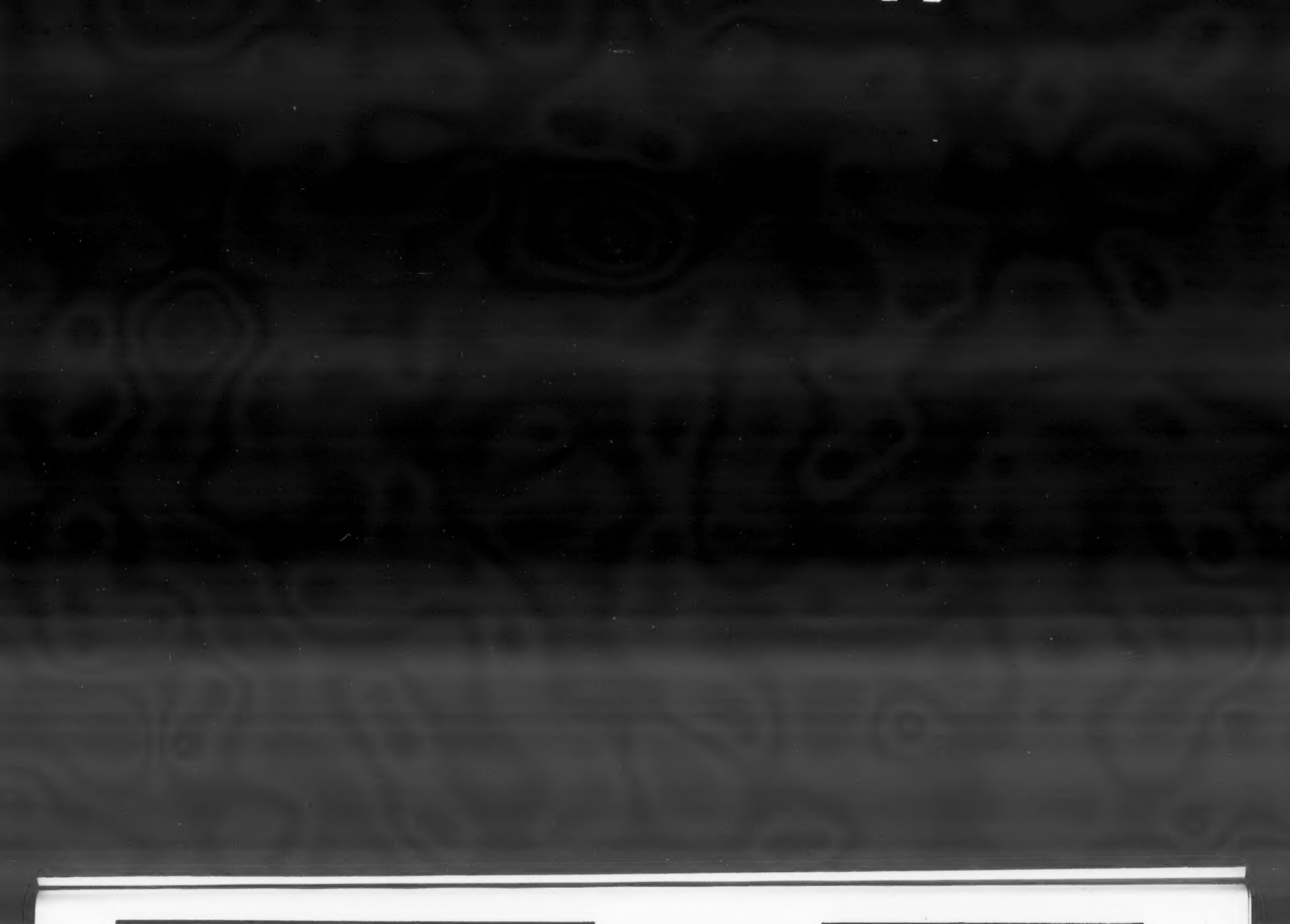
New and extended works, new machinery and new methods are being employed to ensure an adequate supply of bricks for all building requirements.

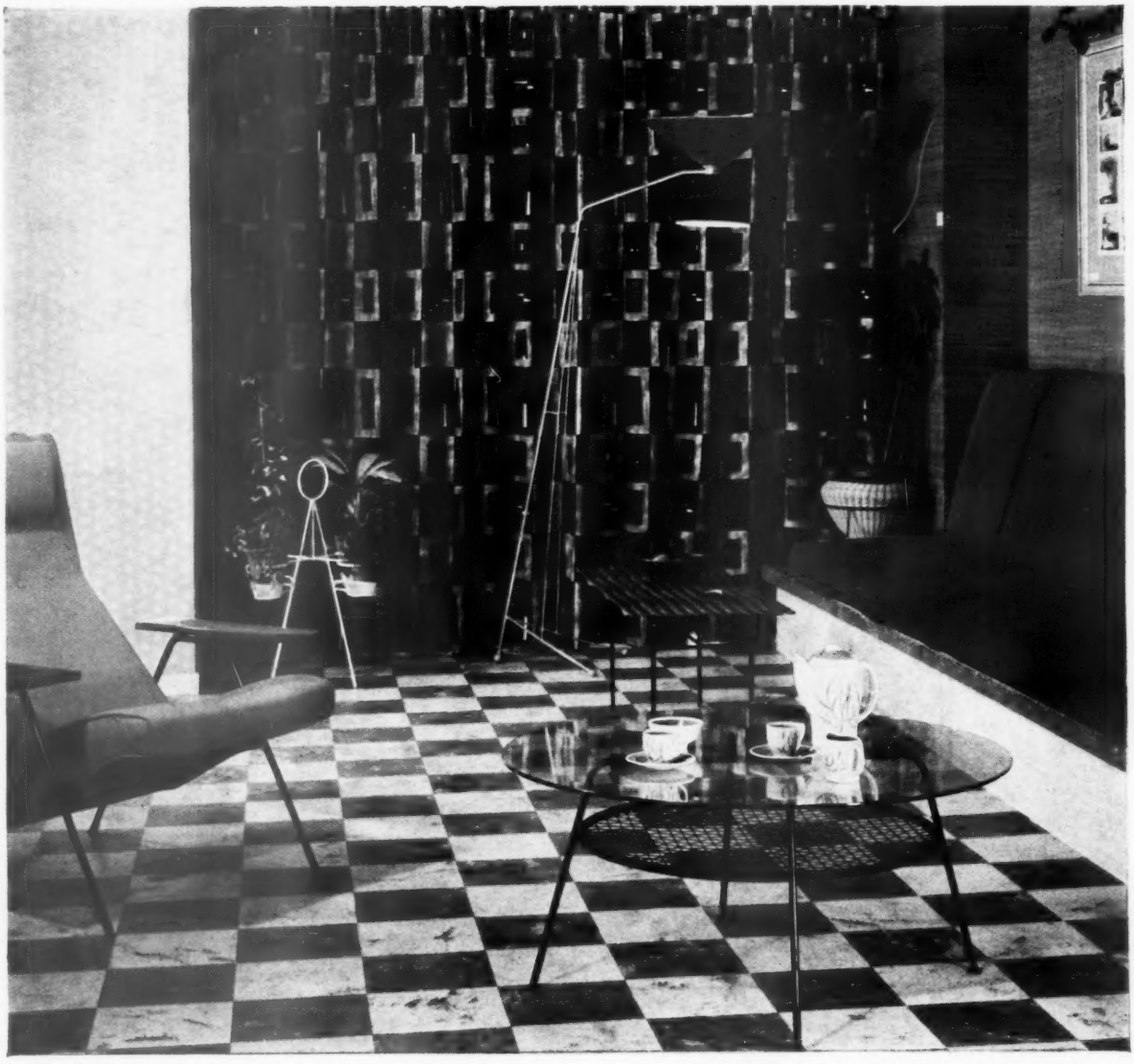


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Modern materials in a contemporary setting—includes Accotile—the modern thermoplastic flooring, in a design which is simple and in complete harmony with its setting.

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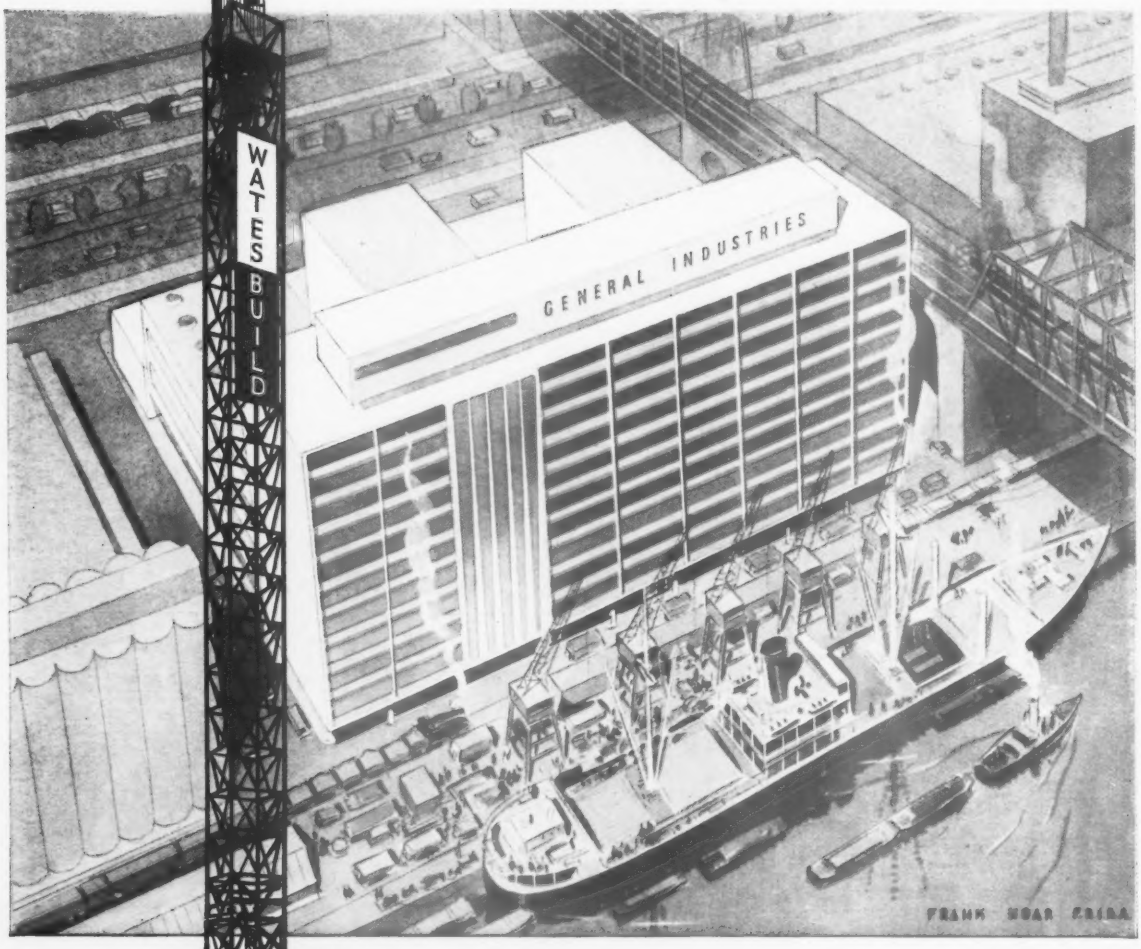
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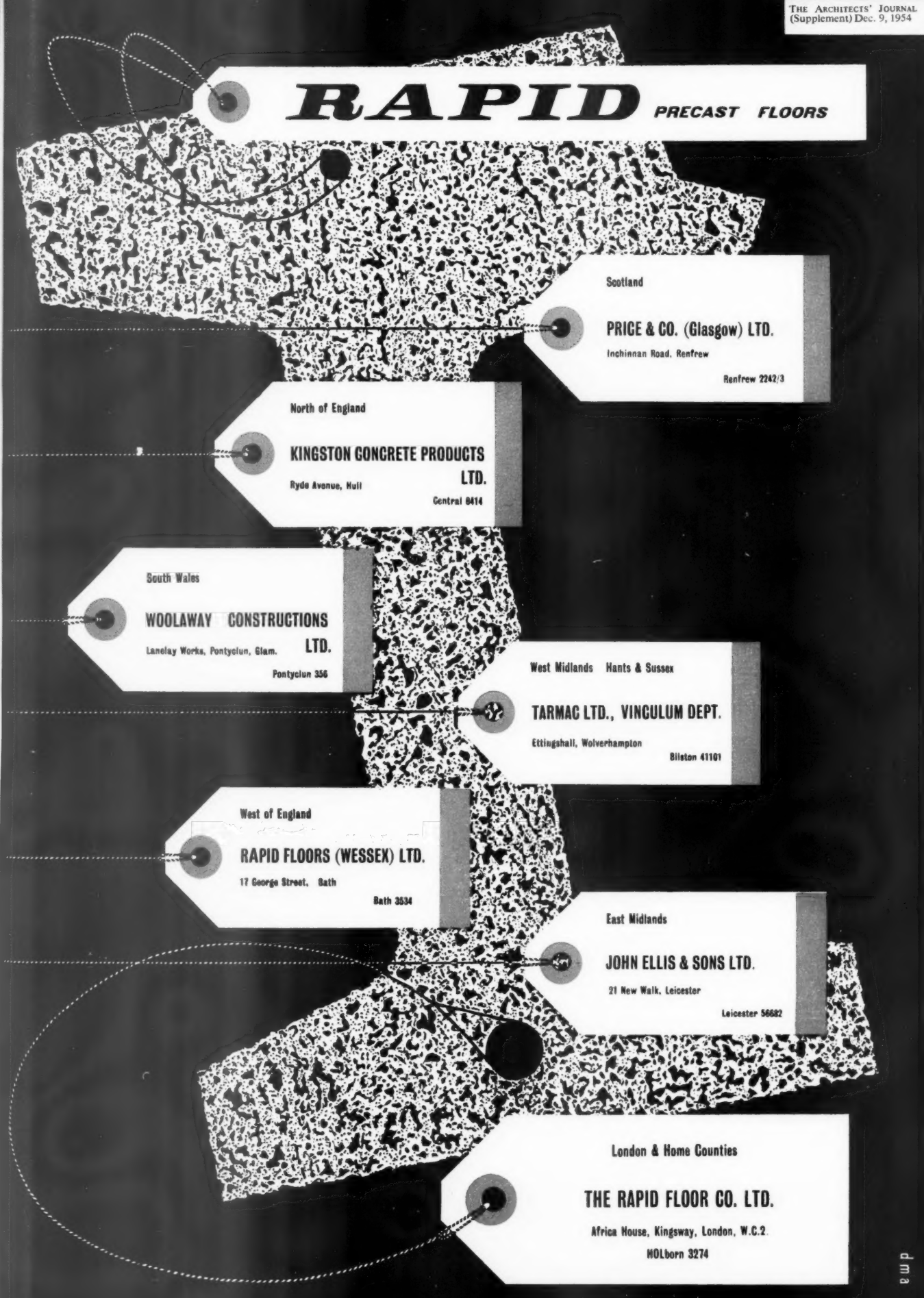


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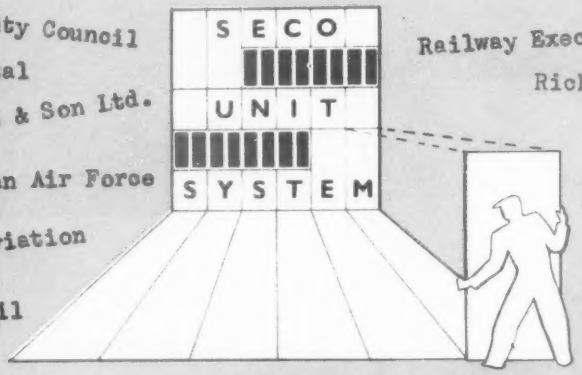



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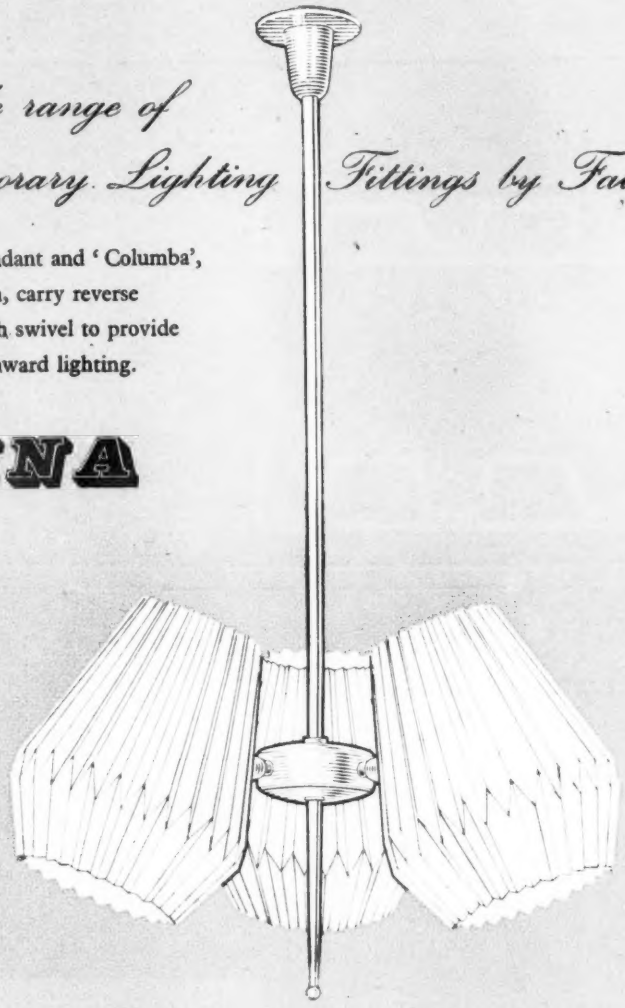


2 *of a wide range of*

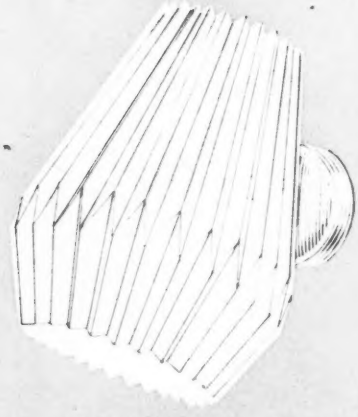
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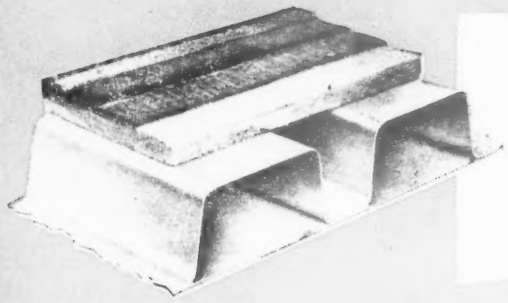
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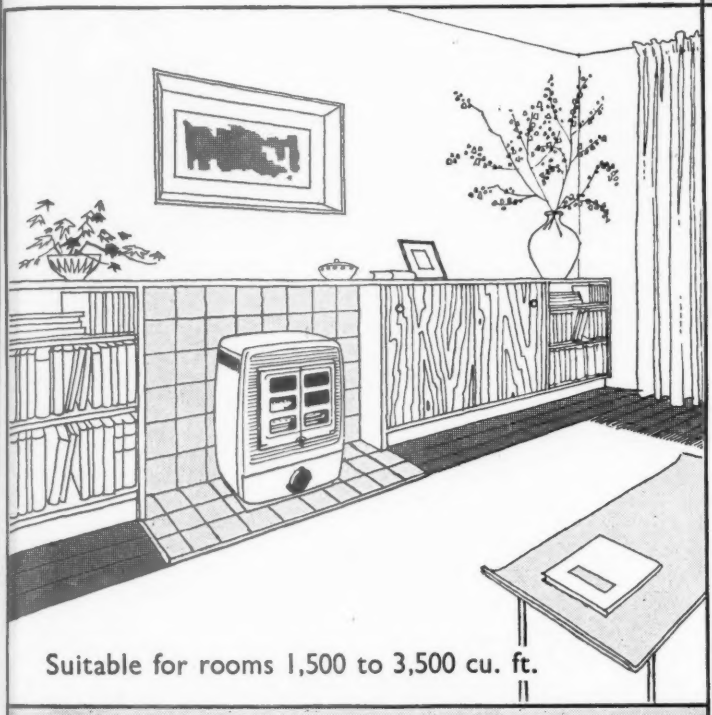


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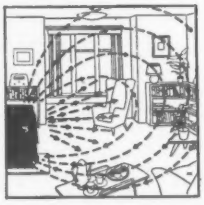
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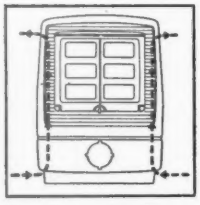


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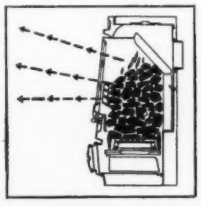
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for radiant and convection heating



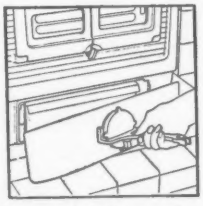
The well-known "warmth all round you" effect, plus a good view of the fire.



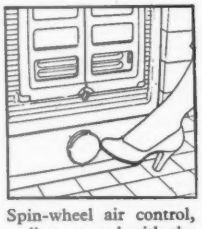
The Convection Flow: the inlet slots are concealed in the base, the outlet ones are at the sides.



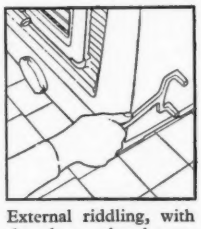
Note the firebrick lining, and the removable front bars.



Simple shovel-type ash-pan. Notice the tool.



Spin-wheel air control, easily operated with the foot.



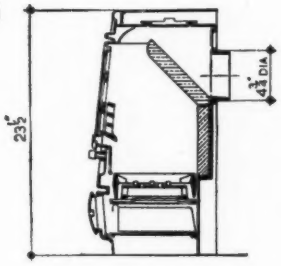
External riddling, with the doors closed — no fly-ash. Notice the tool again.

NOTES:

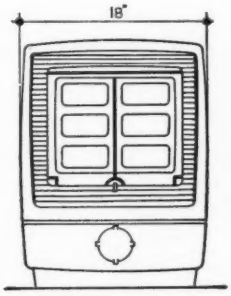
Beautifully designed, with real respect for 'commoditie firmnesse and delight'.

Excellent performance: can save up to 60% of fuel compared with the ordinary open fire.

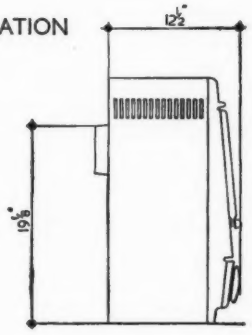
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FRONT ELEVATION



SIDE ELEVATION



Colours: Beige mottle, fawn mottle or black, Alisheen black, bramble, copper, bronze, or green.

Heating Capacity: The Rayburn Room Heater is suitable for rooms of 1,500 cu. ft. to 3,500 cu. ft. capacity.

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For further information about the Rayburn Room Heater write to the Housing Division of—

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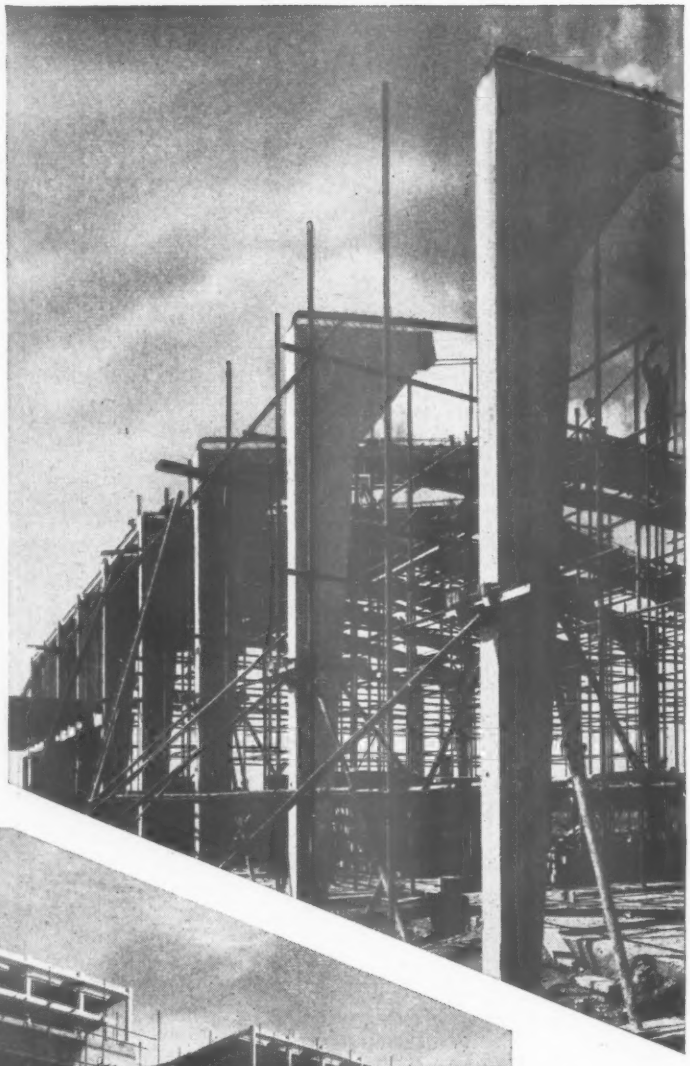
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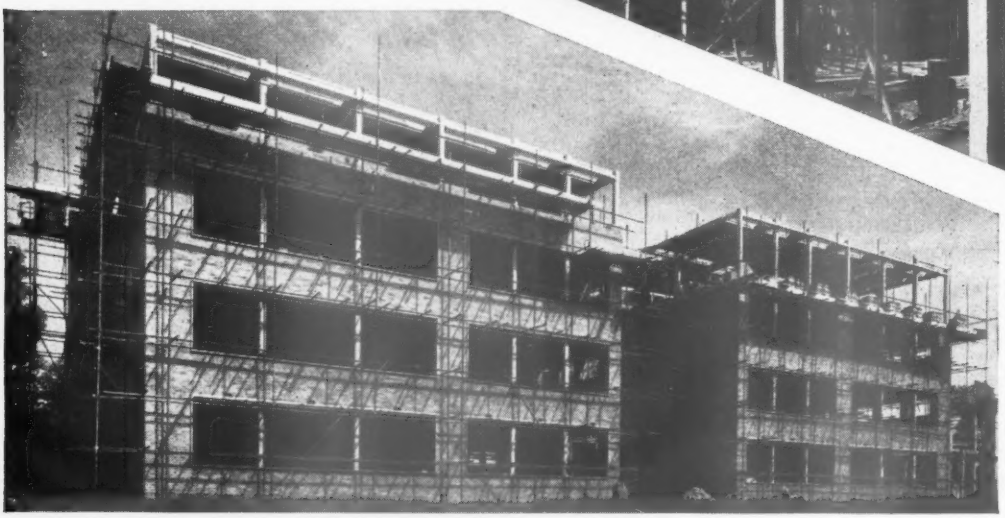
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The Orlit service embraces the preparation of structural schemes, including foundations, in conjunction with architects and engineers. If required, Orlit Ltd. will carry out foundation work of buildings of their own construction.





Above: Precast columns to 48' span Assembly Hall.

Left: Front elevation showing traditional brick cladding and Orlit structural framework (upper storey); window surrounds by Orlit.

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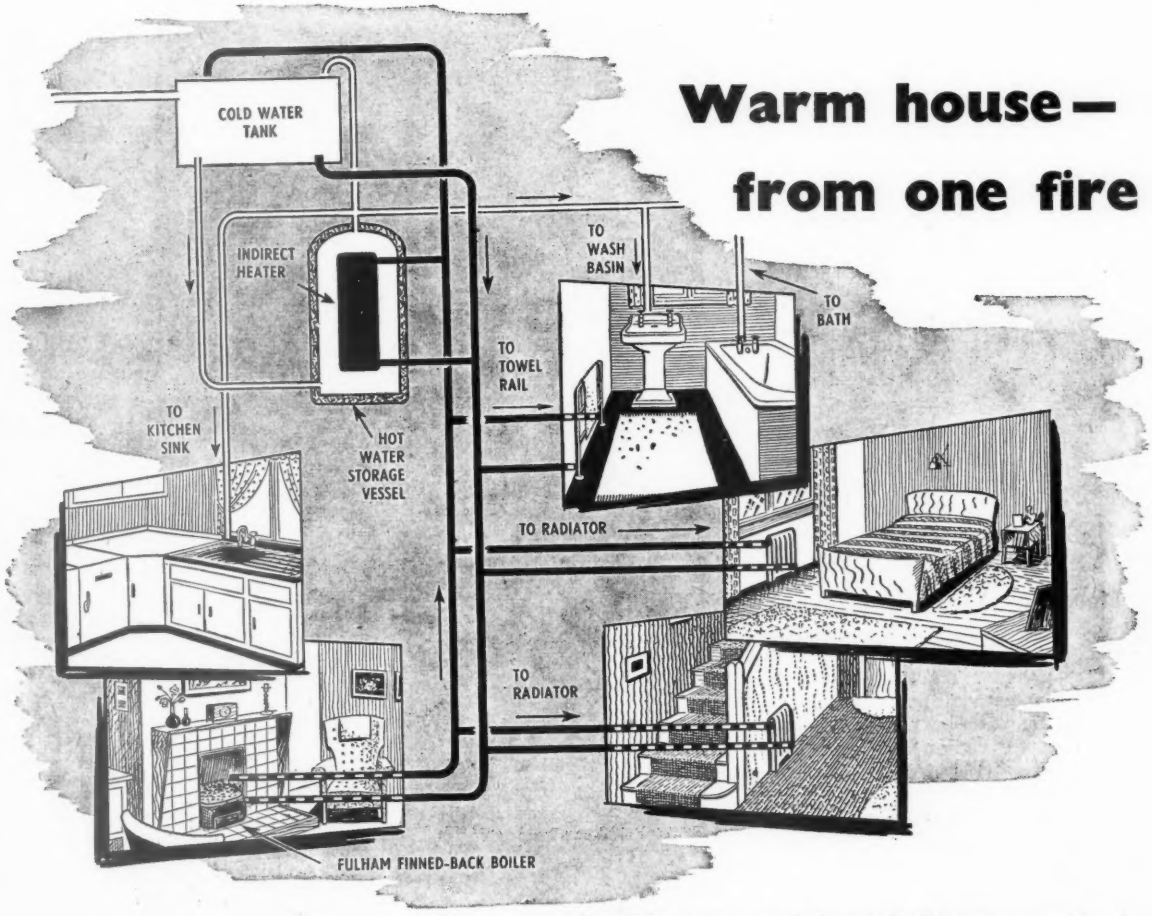
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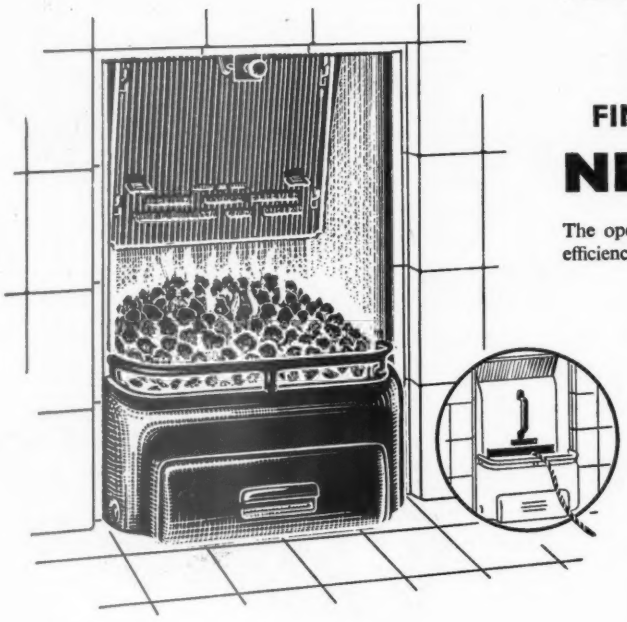
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An efficient and economical method of hot water supply and room heating can be provided by installing the

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FINNED BACK BOILER WITH

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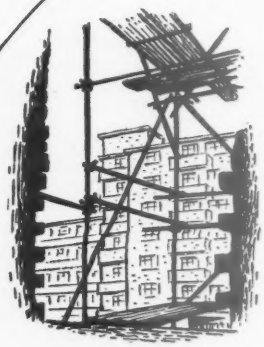
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- Heating towel rail.
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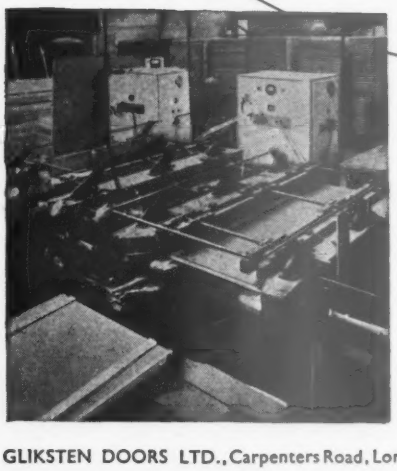


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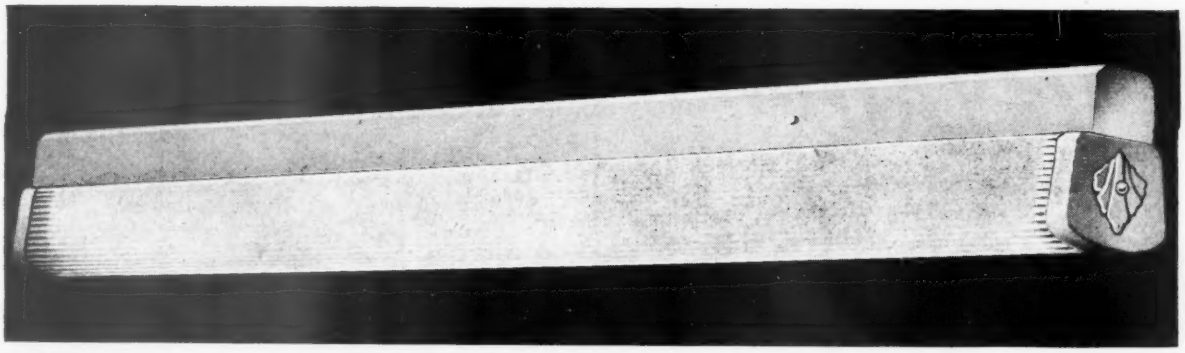
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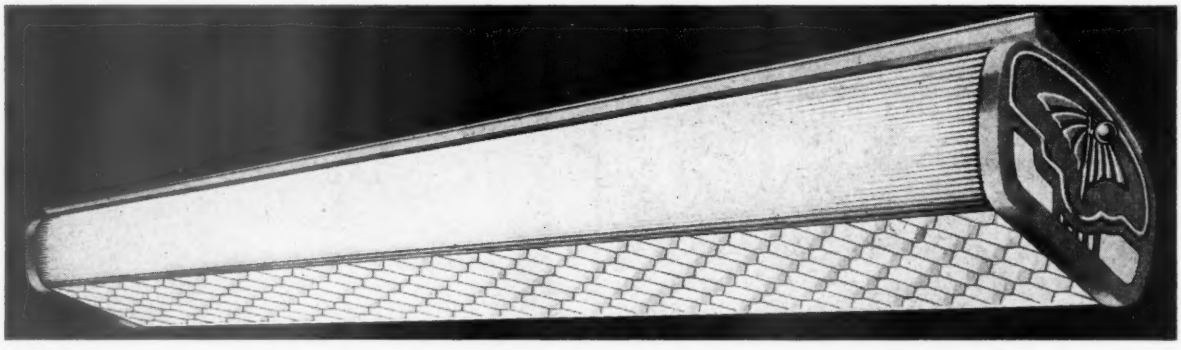
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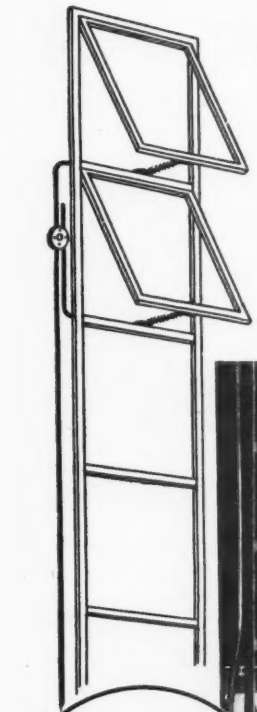
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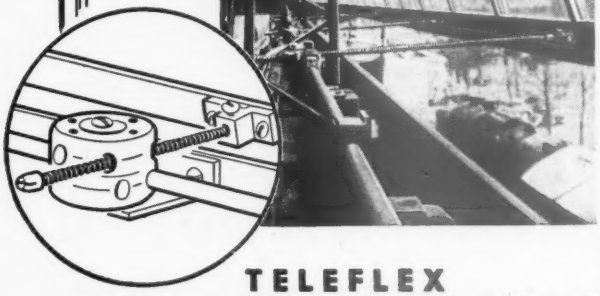
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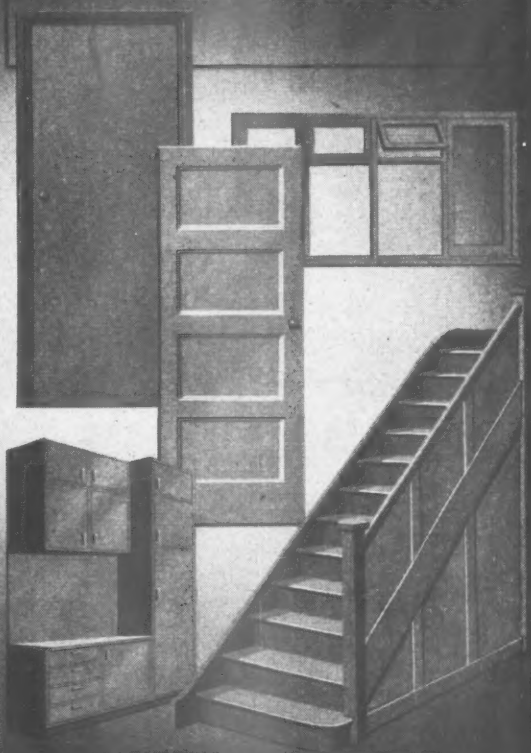
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Our Ref. 2459/52 928/19

R. H. HARRY STANGER

To Messrs. Wheatly & Co. Ltd.

Construction Sheet No. 1
Date 22nd June 1954

Results.

Water absorption test.

Quarry No.	Water absorption, % by weight.	Quarry No.	Water absorption % by weight.
1	4.59		4.25
2	4.15		.40
3	3.42		.12
4			.54
5			.19
			.14
			.66
			.74
			.56

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928/No.2459/52

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R. H. HARRY STANGER

Construction Sheet No. 1
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To Messrs. Wheatly & Company Limited

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	Loss %
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Hydrochloric Acid	0.84
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* The results of these two test would indicate that these quarries are highly resistant to acids and alkalis.

for R.H. Harry Stanger

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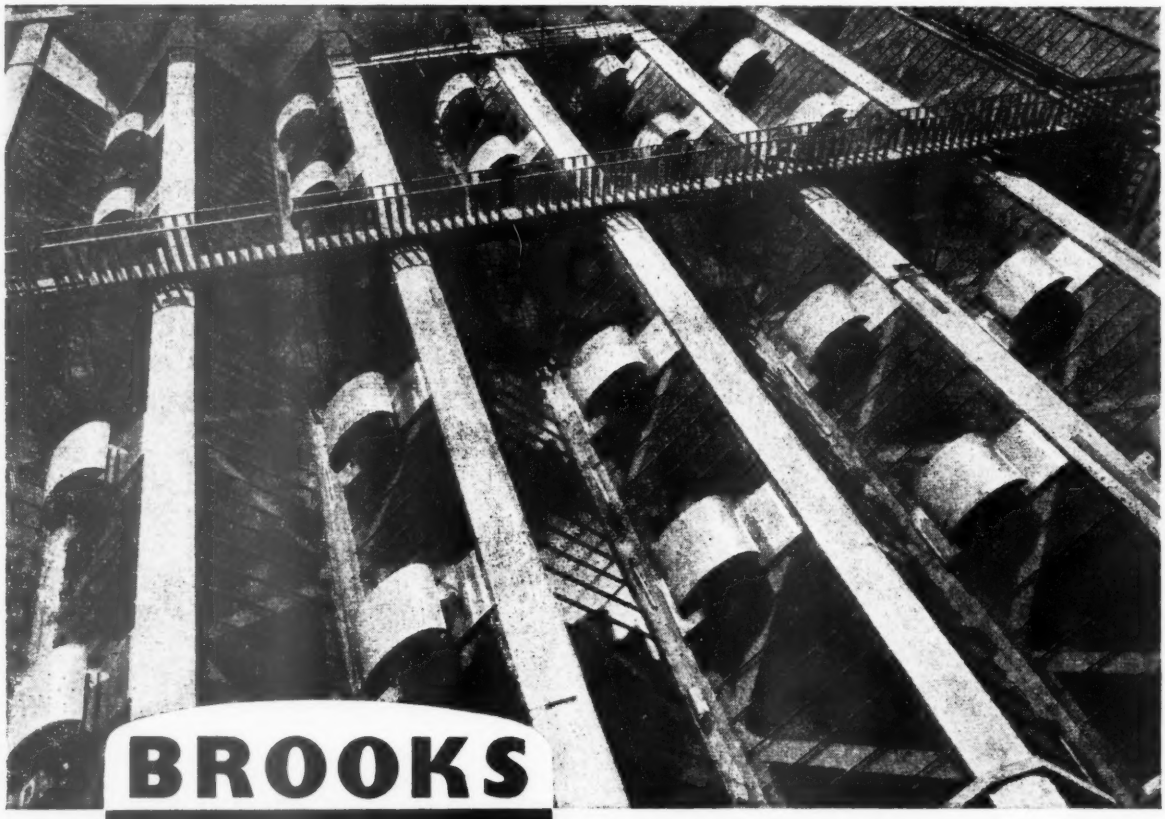
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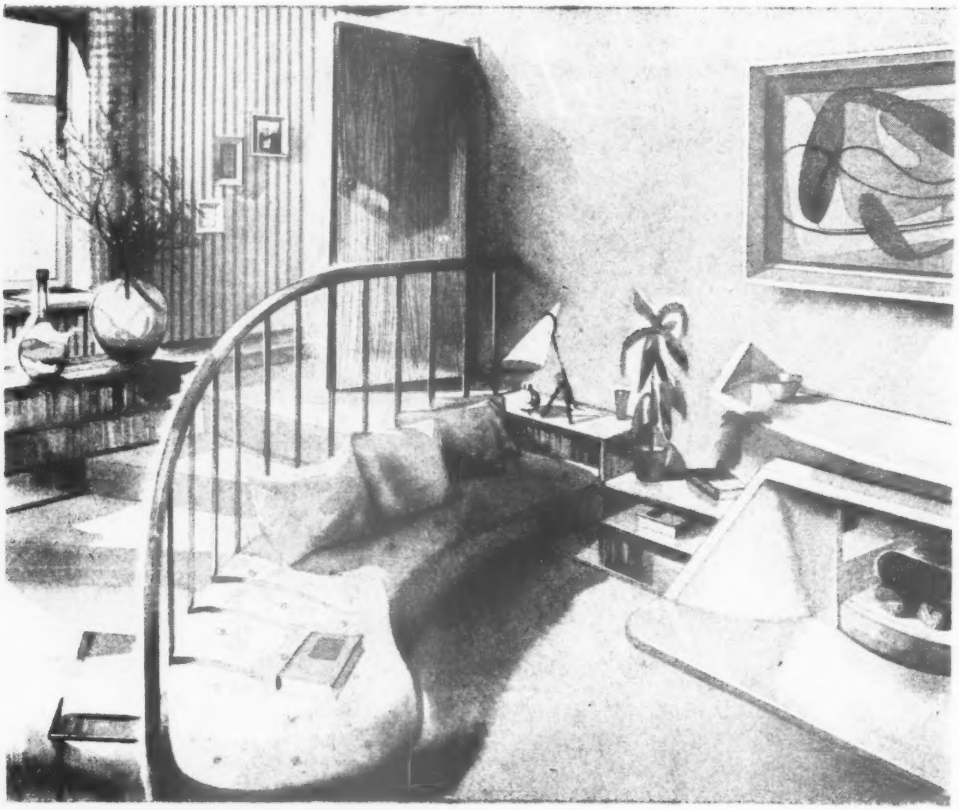
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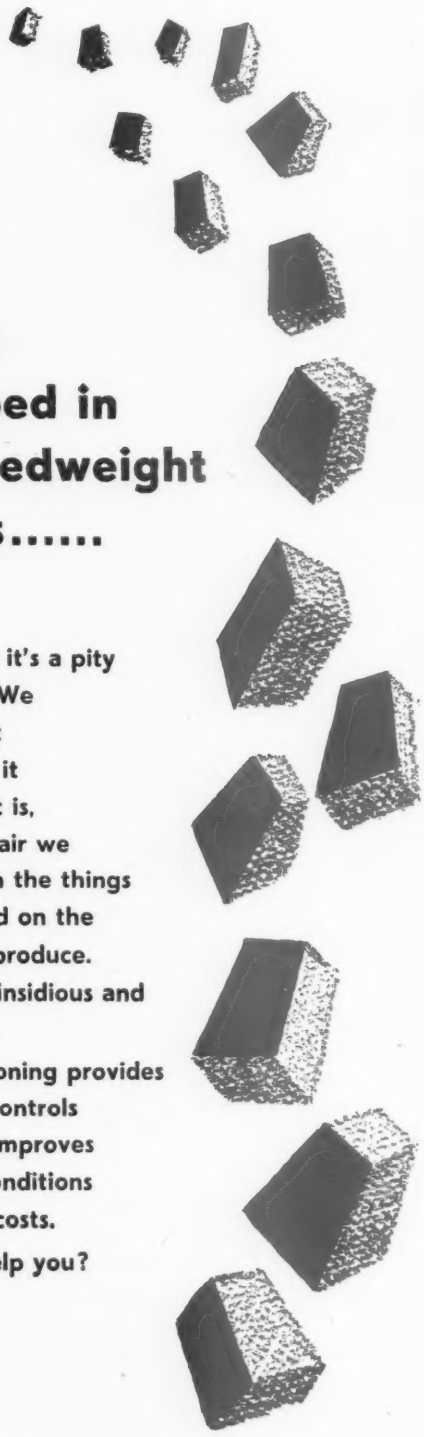
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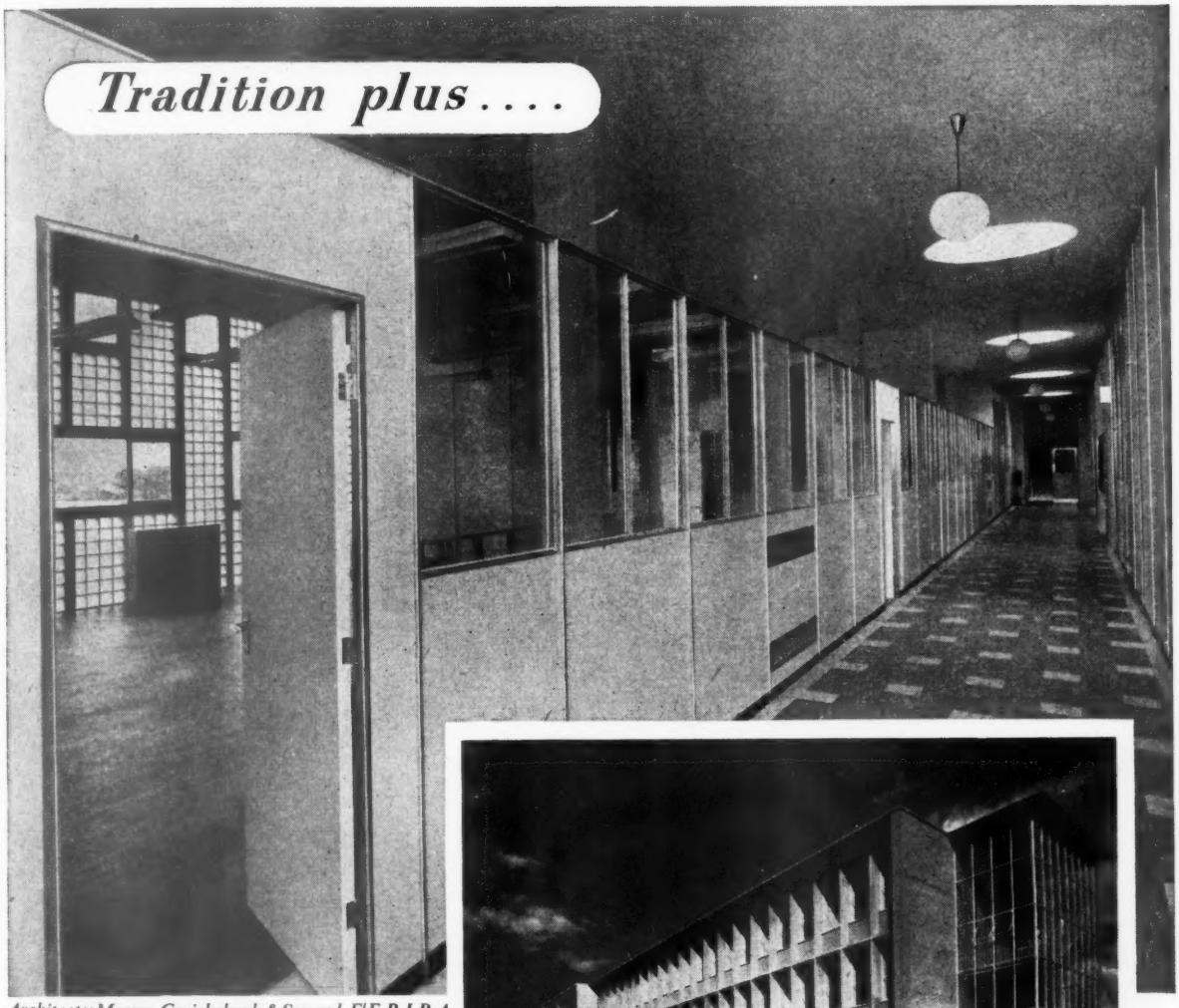
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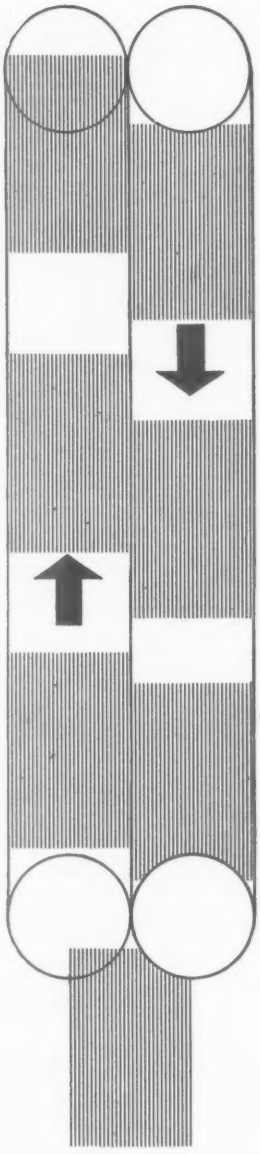
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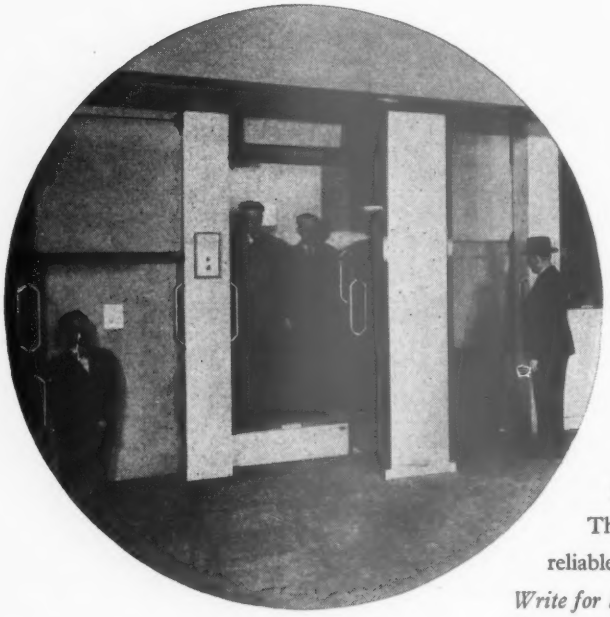
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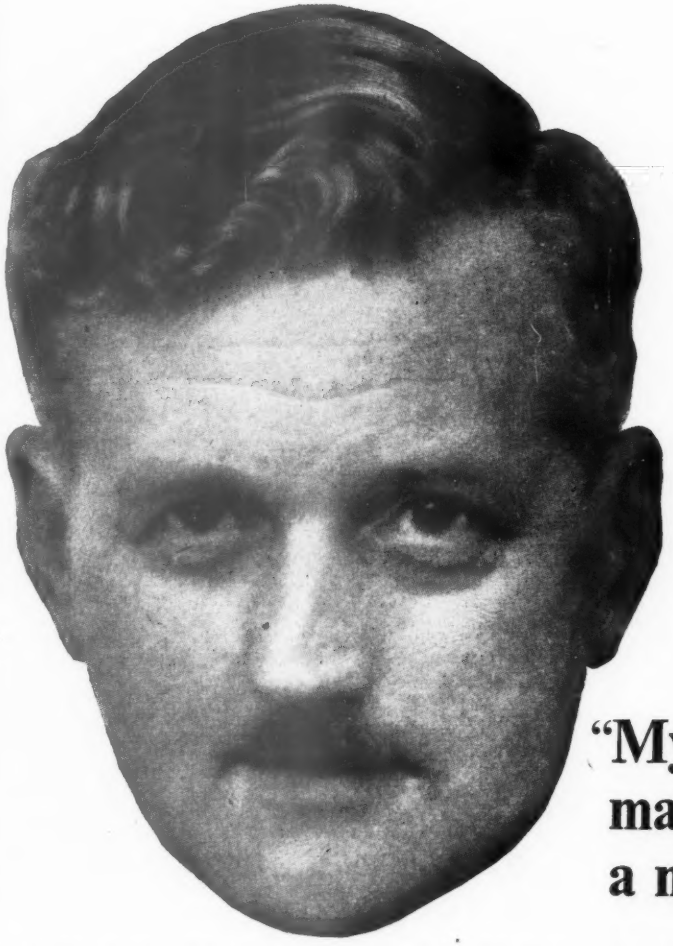
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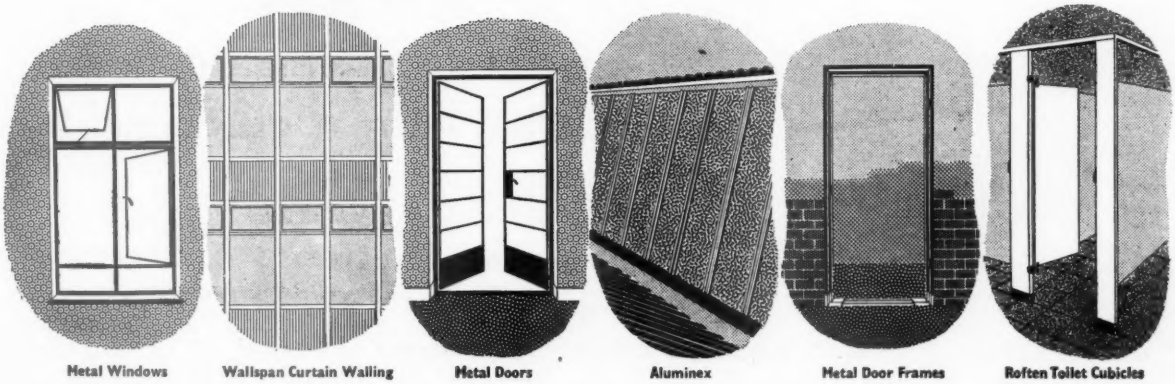
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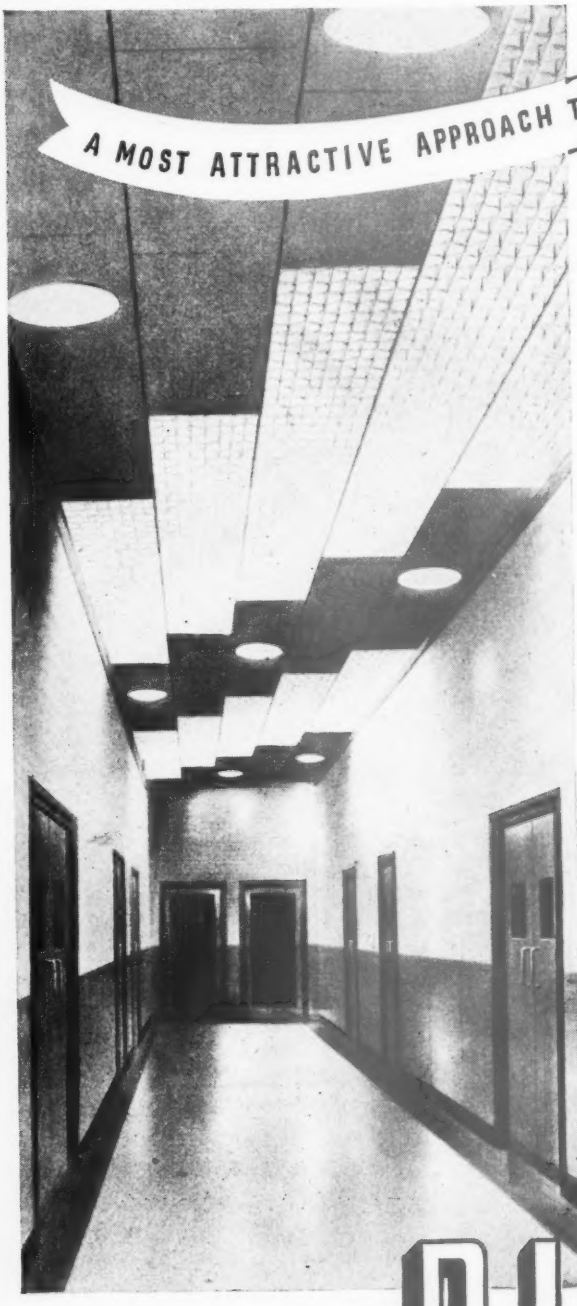
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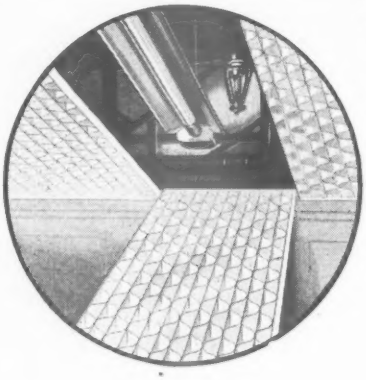
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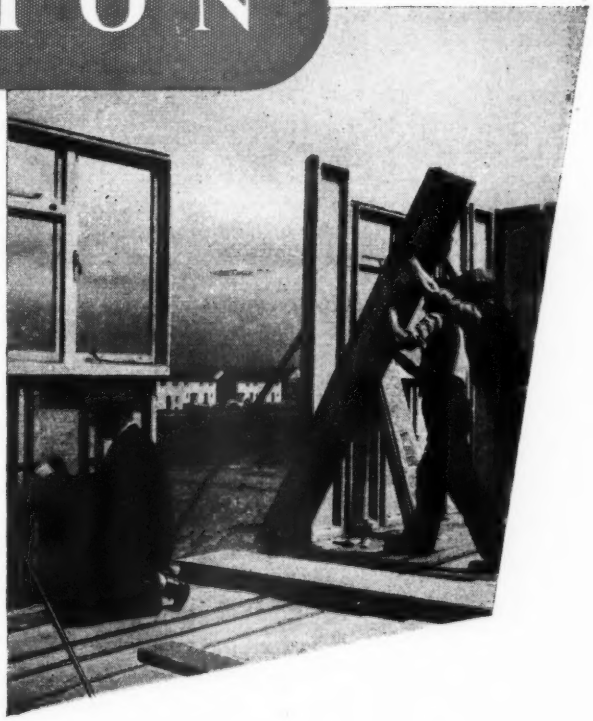
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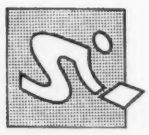
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* To preserve freedom of criticism these editors, as leaders in their respective fields, remain anonymous

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No. 3119 December 9, 1954 VOL. 120

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ROUND OR ACROSS?

The modest proposals for new roads mentioned in the Queen's speech are still no more than a very small drop in the bucket, and it occurred to me to wonder what the JOURNAL has had to say in the past. There *have* been two good suggestions, one by architect Bertram Carter* and another—on a smaller scale—by taxi driver Edward Antrobus.† Mr. Carter proposed London traffic arteries which more or less follow borough boundaries, and often railways as well, where there is a large amount of slum property and compensation payments need not be outrageously high. This scheme would certainly improve traffic *within* the London area, but we must surely still have circumferential roads to prevent the through traffic from coming into the purely London road system at all. They should all have fly-overs where they cross the radial roads or they would take longer to cover than the direct route and would then be ignored by impatient motorists.

*

So far as central area traffic goes, there is still a lot to be said for drastic one-way schemes like Mr. Antrobus's, *i.e.*, north only from Hyde Park Corner to the Marble Arch, east to Oxford Circus, down to Piccadilly Circus and back again to Hyde Park Corner: with, of course, further one-ways inside the rectangle. With a system like this we might even be able to allow a limited degree of unilateral parking and so keep the shopkeepers—who think the one-way stream is bad for business—as happy as possible.

JAMES GANDON

The man who put up the building next to Michael Scott's new Bus Terminal, in Dublin, was the subject of a lecture by Maurice Craig recently. The building in question is, of course, the Custom House, and its architect was James Gandon, who also built the Four Courts and other major features of Dublin's late Georgian scenery. ASTRAGAL, to his shame, had always thought of Gandon as a sort of provincial eccentric and an Irishman born, though there lurked in the depths of his ignorance the knowledge that Gandon was a continuer of *Vitruvius Brittanicus* and a pupil of Sir William Chambers. However, it turned out that Gandon was born in London of French and Welsh parents, spent fifteen years or so kicking his heels without a job, and was considering emigrating to Sumatra because his father had wasted the family fortune on alchemy when he was secretly offered the job of rebuilding the Custom House and smuggled to Ireland to get on with it.

*

Why this secrecy? Mr. Craig did not make it very clear: indeed he soon lost interest in the politics of the case and turned his attention to the buildings, a move which had ASTRAGAL'S full support. But it was less easy to support Mr. Craig's contention that the Custom House is feminine architecture, and the Four Courts masculine. Perhaps he just meant that the one is prettier, and the other tougher and rougher, but surely *pretty* and *feminine* are not necessarily synonymous. In the meantime, is there a building-sexer in the house?

CORB RE-ASSESSED

It is a common complaint that when the ICA lays on a meeting on an architectural subject for lay listeners, only architects come. The reverse also appears to be true, and there did not appear to be a single architect present —certainly none that ASTRAGAL would recognize as such—to hear Toni del Renzio hold forth on the more specialized topic of an attempted re-assessment of Corb's *Towards a New Architecture*. It was the architects' loss, for they missed not only a sizzling talk, but also a hitherto unpublished side elevation of Gina Lollobrigida.

*

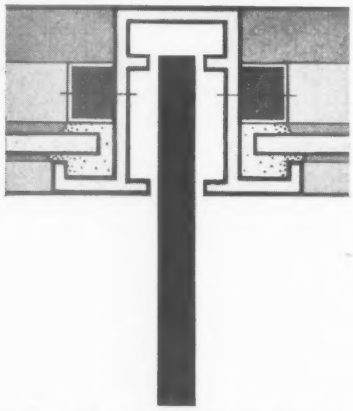
Just how a slide of the latter came to appear on the screen would require too lengthy an explanation to be set down

* July 13, 1950.
† January 13, 1947.

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here, but it was in connection with a discussion of the word "beauty," which is one of the words that, according to Mr. del Renzio, the Master uses in a sloppy, and sometimes crooked manner. Other such words were "architecture," "plan," and "standardization," on which considerable damage was wrought merely by juxtaposing different passages from the book in which the words were used in quite different meanings. ASTRAGAL concedes the speaker his point here—Corb *is* a sloppy writer—but still feels, in a faintly mutinous manner, that the book remains emotionally convincing for all that. And the entire meeting agreed that, whatever may or may not be wrong with the book, this is no reflection on the quality of the buildings.

PLANNING AT YALE

ASTRAGAL has just been reading "City Planning at Yale"—a selection of papers and projects from the Planning Department of the University. They are all very lively, competent and well produced. Christopher Tunnard's name as one of the editors is a recommendation. The contents are varied. Studies made under Steen Eiler Rasmussen bear, in some mysterious way, his Danish stamp, and are none the worse for it. Fiske Kimball contributes an excellent pare on Thomas Jefferson and Civic Art. The most interesting thing in this excellent little book is a discussion on "Monumentality" in which Joseph Hudnut (formerly of Harvard) and our own Sir William Holford took part.

*

This is rather better than most discussions of the kind and reveals one or two surprising things: Holford, apparently, has no use for the lovely ruin that no longer fulfils its purpose; on the other hand there are still people in the US prepared to defend Pennsylvania Station against Rome Station which, having no ornament, has no scale!

ANOTHER ART NEWSPAPER

It is a portent, or something, when any new periodical devoted to art appears on the English market, and the appearance of a second fortnightly art newspaper is even more of a portent because it suggests that not only does someone think that there is a market for such a paper, but that the market is worth competing for. The new fortnightly is called, quite simply, *Art*, and offers the same kind of service on the same kind of format as *Art News and Review*, and at the same price.

*

The first issue gets away to a flying start with a nude on the front page and articles on Fernand Leger, the Art of the Eighteenth Century and, *Beware the Middle-brow*. There is also Jack Beddington's favourite picture—but ASTRAGAL isn't going to tell you what it is: put down your sixpence and find out. The newcomer is clearly going to add life to the field of art journalism, which is one that is normally free from anything so lifelike as competition.

PORTUGAL

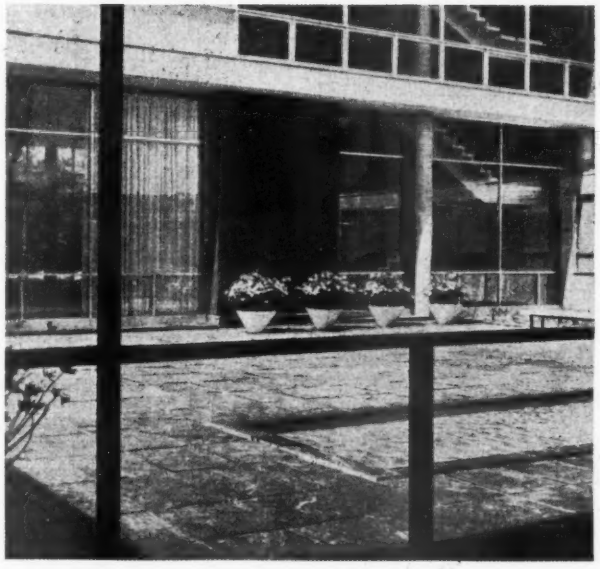
If it is possible to turn a guide book into poetry, then Sacheverell Sitwell is the man to do it. It is a doubtful procedure; guide books, ASTRAGAL feels, should be as factual as Bradshaw. Travellers tales, memories and ecstasies are another matter, and should be kept between their own covers. Nevertheless, if it must be done, let Sacheverell do it. "Portugal and Madeira"* must, as the author admits, be used as a kind of glorified supplement to that indispensable work by Ann Bridge and Susan Lowndes—"The Selective Traveller in Portugal." Sitwell's golden phrases and purple passages may cloy; they are well offset by the practical advice of the "Selective Traveller."

WHAT LANCASHIRE THINKS TODAY. . . .

Many town-planners and architects with inclinations towards planning feel

* Batsford, 18s.





The MOW have been making some attempt to improve design standards in British embassies abroad, but they have a long way to go if they are to equal such work as Norway's Embassy (above) in Stockholm (architect, K. Knutsen), and the American Embassy (left), also in Stockholm (architect, T. Westman).





The City Skyline

Opportunities for comprehensive development have already been missed on small bombed sites in the city of London. It would be a shameful thing if the city missed the great opportunity of allowing comprehensive development of the 40-acre Barbican site (bottom picture). The New Barbican Committee, whose project has been turned down by the Court of Common Council (for reasons which are discussed on the opposite page), intends to fight to get its scheme accepted. If it fails we may be sure that the buildings put up will have neither a deliberately-planned harmonious roof-line, nor the unplanned charm of the roof-tops seen in the other picture above.

that present events are rather dull though the future looks bright. Those who do feel like this may like to know of three appointments at Liverpool which will be advertized in the JOURNAL during the next 2 or 3 weeks. The first two, a Letcureship and a Leverhulme Research Fellowship, will be in the Department of Civic Design at a salary between £550 and £1,000, plus a probable £75-£150 when the recent increases in University salaries have been worked out. The third appointment, a new Leverhulme Research Fellowship, will be in Architecture or Civic Design, at a salary of £500.

*

ASTRAGAL is told thatb oth the Research Fellows are likely to be asked to work on a central redevelopment project which will take account of all the hard lessons we've learnt since 1945.

*

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From a builder you will get an 'estate' type of house, a good average home for the average man. Since he can use mass production methods his house will be cheaper than one built to your own requirements.

There is a lot to be said for both points of view. In any case you will need money, so we suggest you call and see us before you do anything else.

like; the phrase "incorporating your own fancies" suggests mild extravagance for not very sensible reasons. But in recent months building societies have made themselves a little unpopular by refusing to lend money on anything but the most orthodox of "spec." designs, and it is pleasant to discover one which is doing some mild publicity on the architect's behalf, and which seems quite anxious to lend money for architect-planned houses.

ASTRAGAL

GUEST EDITORS, 1955

The JOURNAL's *Guest Editors for* 1955, *who will conduct an investigation on the cost of building, are:* NORMAN STANLEY FARROW, M.B.E. (*building contractor*), *of Howard Farrow, Ltd. He was a member of the Anglo-American Productivity Team in* 1950.

CLEEVE BARR, A.R.I.B.A. *In* 1953 *he was appointed to his present position as senior architect* (*development*) *in charge of technical development and research* (*new techniques and materials generally*) *for the Housing Division of the LCC Architect's Department.*

JAMES NISBET, A.R.I.C.S. (*quantity surveyor*), *of the MOE Architects and Building Branch. He was leader of the team of quantity surveyors, under the MOE's chief architect, S. A. W. Johnson-Marshall, who worked out the system of cost analysis and cost planning described in the MOE Building Bulletin No.* 4.

IVAN TOMLIN, A.I.B.E., *chief estimator and surveyor, Building Division, Howard Farrow, Ltd., and treasurer of the London Regional Committee of the Institute of Building Estimators.*

E. F. L. BRECH, B.A., B.SC.(ECON), M.I.I.A. (*management consultant*), *senior partner, Urwick-Orr and Partners, Ltd. He is author of "Management, Its Nature and Significance" and is editor and part-author of other publications on the same subject.*

Details of this team's programme of investigation will be published shortly.

The Editors

BUILDING HIGH AND WIDE

THE New Barbican scheme* for the development of forty acres in the City of London has been turned down by the Court of Common Council. The Council, which debated the New Barbican proposals last Thursday, accepted a report of the findings of its Improvements and Planning Committee. These findings were adversely critical of the proposals. It was said—among other things—that the scheme "made no attempt to comply with present standards," that acceptance of it would mean revocation of a number of planning permissions already granted, and that evidence was needed both that capital would be available to the scheme's promoters and that there would be sufficient demand for warehouse accommodation provided.

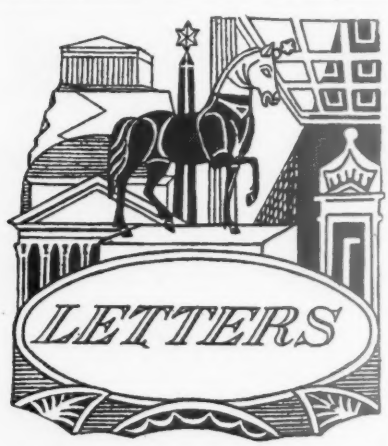
The New Barbican Committee—the promoters of the scheme—have answered some of the criticisms made by the Council's Committee, as readers will see on page 701. They accuse their critics of misreading the plans; they claim there is no truth in the statement that other planning permissions would have to be revoked if the New Barbican scheme was accepted, and they point out that advertisements in the Press show how keen is the demand for warehouse space in the city.

It is said that a number of contractors have already approached the Council's Improvements and Town Planning Committee with offers to advance a total of £25 m. for the construction of the Barbican project. But it is obvious that the Corporation is not primarily worried about the promoters getting money for their project: indeed, the Court of Common Council deleted from its Town Planning Committee's report the

* This scheme, designed by Sergei Kadleigh, William Whitfield and Patrick Horsbrugh, was illustrated in the JOURNAL on October 14.

promise that if evidence of financial support was provided the Committee would " of course " submit a further report to the Common Council.

We are pleased to hear that the New Barbican Committee intends to fight to get its scheme accepted. But the quality of the criticisms made by the scheme's opponents suggests that fear and caution are largely responsible for their uncompromising damning of it. It would, after all, be so much more convenient for them to cope with one small-sized proposal at a time, until the Barbican area was covered with undistinguished self-contained buildings. It is, perhaps, too easy to be contemptuous of such caution. The economics and the social implications of building high are not yet widely understood in this country. We are, therefore, glad to announce not only that the RIBA is to present a Symposium on High Flats next February (see page 701), but also that the economics of high building will be discussed by the JOURNAL's Guest Editors for 1955 as part of their programme of investigation of costs.



J. M. Vawser, A.R.I.B.A.
W. G. Harper, L.R.I.B.A.
G. B. Oddie, A.R.I.B.A.
" Disgusted "
" Student "

Public Architects' Status

SIR,—I feel sure that many of my colleagues in the public service must have been disturbed, as I was, to read the comments made by the President of the RIBA in his inaugural address on their request for the support of the RIBA in their struggle for improved status. We, in common with Mr. Aslin, have the interests of the profession as a whole at heart, yet it is hardly to be expected that we should continue to be content with the secondary rôle that is at present ours. The RIBA is, in fact, " an organization which supports one section of members to the disadvantage of others," and it is surely permissible for the well-qualified and hard-working body of architects in salaried employment to expect a similar interest in their well-being to that accorded to their colleagues in private practice.

JOAN M. VAWSER.

Birmingham.

Not Overcrowded

SIR,—Reading ASTRAGAL'S notes in the JOURNAL of November 11, on the subject of the new BMA Memorial, I was most surprised at the suggestion that we are suffering from professional overcrowding. If he will turn to the last few pages of almost any copy of the JOURNAL during the last year or two, he will find many pages of advertisements for " Appointments Vacant," and very, very few applications for jobs. Should he know of any useful assistants that are being crowded out, believe me, they would be most welcome in the Midlands.

I have not yet seen the memorial statuary at the BMA headquarters, but if the doctors are not entirely pleased, I am sure they will remember that they have a considerable advantage over architects—they bury their mistakes.

W. GEOFFREY HARPER.

Birmingham.

Lighting Installations

SIR,—I would like to congratulate you on your issue for November 18 which was devoted to electrical installations and which, to my mind, fulfils, as they say, a long felt want in gathering together in one place the information an architect needs in order to have a working acquaintance with the subject.

There is, however, one point to which I would like to draw your attention. Table I on Page 617 gives minimum recommended illumination levels for various types of interior; and for lecture theatres, assembly halls and gymnasia in schools, the recommended level is 5 ft. candles (= 5 lumens per sq. ft.). I would point out that the School Building Regulations (Statutory Instrument 1954, No. 473) require (Regulation 51) that " in all teaching accommodation and kitchens the lowest level of maintained illumination . . . on the appropriate plan in the area of normal use . . . shall be 10 lumens per sq. ft." As lecture theatres, assembly halls, and even gymnasia are counted as teaching accommodation, you will see that anyone who accepted the recommendation given in your Table would be contravening the Statutory Regulations. On the other hand, the level of 15 given in your Table for Classrooms is in excess of what is required by the Regulations.

G. B. ODDIE.

London.

Private Work and Public Duties

SIR,—As a public architect, I take strong exception to the views expressed in your leading article of September 2; also to the opinions of your correspondent, Walford Locke.

So long as an architect does not allow his private work to encroach on his public duties, and such work is not carried out in his employer's " over-staffed luxury office," I cannot understand why your JOURNAL, or certain of its readers who happen to be in private practice, should wish to place a ban on work carried out by public officials in their own time.

If the RIBA supports this point of view, I would suggest that the only remedy is for public architect members to resign " en masse," and form their own independent society, as I consider that the prohibition of private spare time work amounts to nothing less than dictatorship.

As regards your suggestion that public architects should receive some form of incentive payment to compensate them for being barred from private practice, I can well imagine the lion's share going to borough engineers and other such individuals in control of architectural staffs, often completely lacking in architectural qualifications or abilities, but always prepared to accept a " rake-off."

In conclusion, I would suggest that the appropriate moment for placing a ban on private work carried out by public architects, would seem to be when a similar ban is placed on private firms undertaking such work as schools and housing schemes for local authorities, to the detriment of local authority staffs.

" DISGUSTED."

London.

Public Relations

SIR,—What with the great efforts being made by the profession to " sell " architecture to the public; and the plea from your young architect correspondent to be told how best to start and build up a private practice without contravening the RIBA code of practice rules; it was with great interest that I read an article in the April 1954 issue of the *Architectural Forum*, entitled, " A pocket guide for better public relations," from which I quote a few suggestions.

" In normal business contacts: Make a list of community leaders. When articles of special public interest, such as School Economy Forum, appear in magazines, send copies to all along with your card and brief remark, such as, 'This might interest you!'

" Do not wait until the man is a potential client. On starting a new job: Consider these possibilities for publicity: Business section of local newspaper, trade papers in owner's field, magazines in construction field. Similarly on completion; newspapers, popular magazines, industry magazines, radio and television. Report job on 'preview' basis to industry magazines you think will best assure its being noticed by potential client.

" When building is ready for occupancy: Arrange to have good photographs taken. If you are in photograph, be sure you are doing something. A pretty girl in picture always helps."

These are a very few of the suggestions put forward by *Architectural Forum* to counteract ". . . poor public understanding. . . " I hesitate to think what the RIBA would say to some of these suggestions.

"STUDENT."

Edinburgh.



GOLD COAST

Society of Architects

A Gold Coast Society of Architects has been formed. One of the functions of the Society is to provide information on local conditions to architects who are proposing to take up an appointment in the Gold Coast. Requests for information should be made to Arthur Lindsey, Acting Secretary, P.O. Box 1343, Accra.

RIBA

Symposium on High Flats

A Symposium on High Flats will be given at the RIBA, 66, Portland Place, W.1, on Tuesday, February 15, with Dr. J. L. Martin (architect to the LCC) as chairman.

At the morning session, beginning at 10 a.m., questions of policy and planning will be discussed. The subjects for the afternoon session will be construction, technology and economics.

Admission—by ticket only—will be limited. A charge of 10s. 6d. per person will be made to cover morning coffee, buffet lunch and tea. Applications for tickets, accompanied by cheques or postal orders, should be sent to the Secretary, RIBA, 66, Portland Place, W.1, as soon as possible.

HOUSING

Figures Still Rising

The number of permanent houses completed in Great Britain during October was 31,518, compared with 30.031 in October, 1953. In the first ten months of 1954, 287,628 permanent houses were completed, compared with 255,894 in the same period of 1953.

STEVENAGE

New Chief Architect

L. G. Vincent has been appointed chief architect and planner of Stevenage Development Corporation. He succeeds Donald Reay, who has resigned and is going to America.

NEW BARBICAN

Scheme Rejected, but Barbican Committee will Fight

Although the Court of Common Council has turned down the proposals for the New Barbican scheme of comprehensive development for a 40-acre site in the City of London, the New Barbican Committee intends to fight to get its scheme accepted.

The Council has approved the reports of its Improvements and Town Planning Committee which included the following statement by the City Planning Officer:—

"The introduction of such a large industrial user would be contrary to the provisions of the Development Plan now before the Minister, in which the area is zoned for commerce, not for industry.

"No attempt has been made to comply with present planning standards. In particular, no natural light is provided to the factory space, the block width of offices is upwards of 70 feet, and, if the figures given verbally are correct (i.e., 4 million square feet of factories and warehouses, 3 million square feet of offices and 1,000 residential units), the density of development is excessive.

"Various isolated sites in the area have already been purchased by the Corporation as a result of the confirmation of Purchase Notices, amounting in the aggregate to about half the total area of 40 acres; but the adoption of a policy of such wholesale acquisition of the remainder of the site, as would be necessary, would be contrary to the Corporation's present policy. Moreover, acceptance of the proposals would necessitate the revocation of a number of planning permissions already granted and the non-performance of an agreement to grant a lease of the site north of Moorgate Station.

"There is no evidence that consideration has been given to the economic aspect of the matter. . . nor has any evidence as yet been given of any demand for the factory and warehouse space proposed."

The report presented to the Council also contained the following comments by the Improvements and Town Planning Committee:—

"We have given very careful consideration to the implications of this vast and imaginative scheme, both from the economic and planning standpoint. Whilst we desire to pay tribute to the public spirited action of the New Barbican Committee in focusing attention on this matter, a preliminary examination of the scheme suggests that a development of this large area on the lines suggested by the New Barbican Committee, would result in the erection of buildings lacking in amenities and natural daylight. Moreover, as the Corporation would be required to invest a very large sum of public money in the wholesale acquisition of the area, it would be prudent before further consideration could be given to this aspect of the matter, for evidence to be produced that capital would be available to the promoters of the scheme, for the execution of the works of excavation and the construction of roads and buildings involved; and further, that there would be sufficient demand for the accommodation thus provided, to ensure that the scheme would be economically sound."

The New Barbican Committee deny that they are introducing much industry. They say accommodation will be 4,000,000 sq. ft. of warehousing (commerce in planning terminology), 3,000,000 sq. ft. of offices and only 1,000,000 sq. ft. of industry. Industry includes (to the New Barbican Committee) such businesses as printing. The Committee see no value in the rigid zoning and wishes also to introduce housing on the higher levels of the scheme.

The Committee say that the Planning Officer has not read the plans correctly. There is ample natural lighting, they say, for factory space but not for warehouse space—which does not want natural light. They point out that the offices are lighted according to the normal City standard of new buildings.

The Committee say that the Planning Officer's remarks about planning standards are based on these mistakes.

The Committee also say that in addition to the areas already purchased, the City Corporation is in process of acquiring considerable further areas, including one which forms one-third of the Barbican site.

They calculate that the City Corporation has already spent about £6,000,000 in acquiring freeholds in the area. In essence, they argue, the City will be economizing little in not acquiring the remainder, which can be used better and the whole can be more profitable to the City than their present possessions.

With regard to the statement that acceptance would mean revocation of a number of planning permissions already granted, the Barbican Committee say it is not true. Three of the five planning permissions are not affected by the New Barbican plan. One of the other two may not be used, as the developer may not wish to develop. And the Committee say that the fifth site for which planning permission has been given, which lies north of Moorgate Station, could be left outside their area.

The Committee point out that whereas in 1939 there were 22 million sq. ft. of warehouse space in the City, in 1949 there were only 10,000,000 sq. ft. The demand has been masked by the belief that it was impossible to obtain more warehouse space. Advertisements in the Press show there is a keen demand. In the administrative county of London warehouse accommodation totals about 182,000,000 sq. ft.

[See also page 699.]

BROWSERS INVITED

A reading room is provided by the JOURNAL'S publishers, *The Architectural Press*, in their house at 9, Queen Anne's Gate, S.W.1. The current list of the firm's publications which may be seen there includes books by or about Le Corbusier, Sigfried Giedion, Walter Gropius, Howard Robertson, Frederick Gibberd, F. R. S. Yorke, Alvar Aalto, J. M. Richards, John Piper, C. C. Handisyde and Peter Shepheard. These, and many others, together with *Information Sheets*, *Working Details* and back numbers of the JOURNAL and the *Architectural Review* may be browsed through in comfort. The room is open from Monday to Friday in office hours.

GOLF

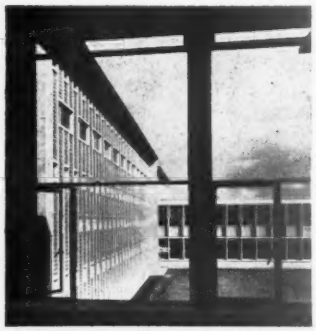
Architects, Builders and Gilbert Harding

The BAGS (Building Alliance Golfing Society), founded in 1925, which is probably the oldest society of its kind in the building industry, recently held its 15th annual dinner. Gilbert Harding, principal guest of the evening, toasted the Society in a humorous and eloquent speech. In responding, the Society's captain, Frank Pavletich, recorded briefly the Society's 1954 activities, the highlight of which had been its annual golf match with the RIBAGS (Royal Institute of British Architects' Golfing Society). V. V. Tatlock, the Society's captain in 1951, has been re-elected to the captaincy for 1955.

OFFICES

at WYTHENSHAWE, MANCHESTER

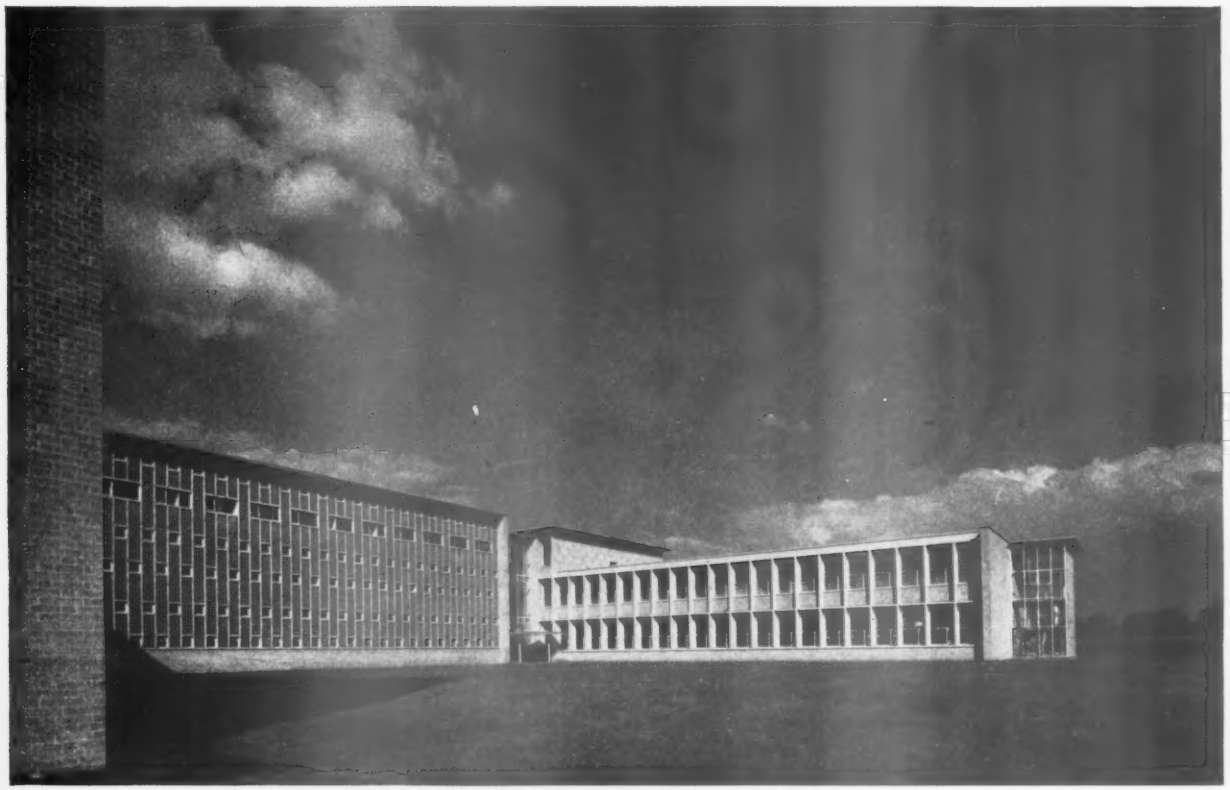
designed by CRUICKSHANK and SEWARD

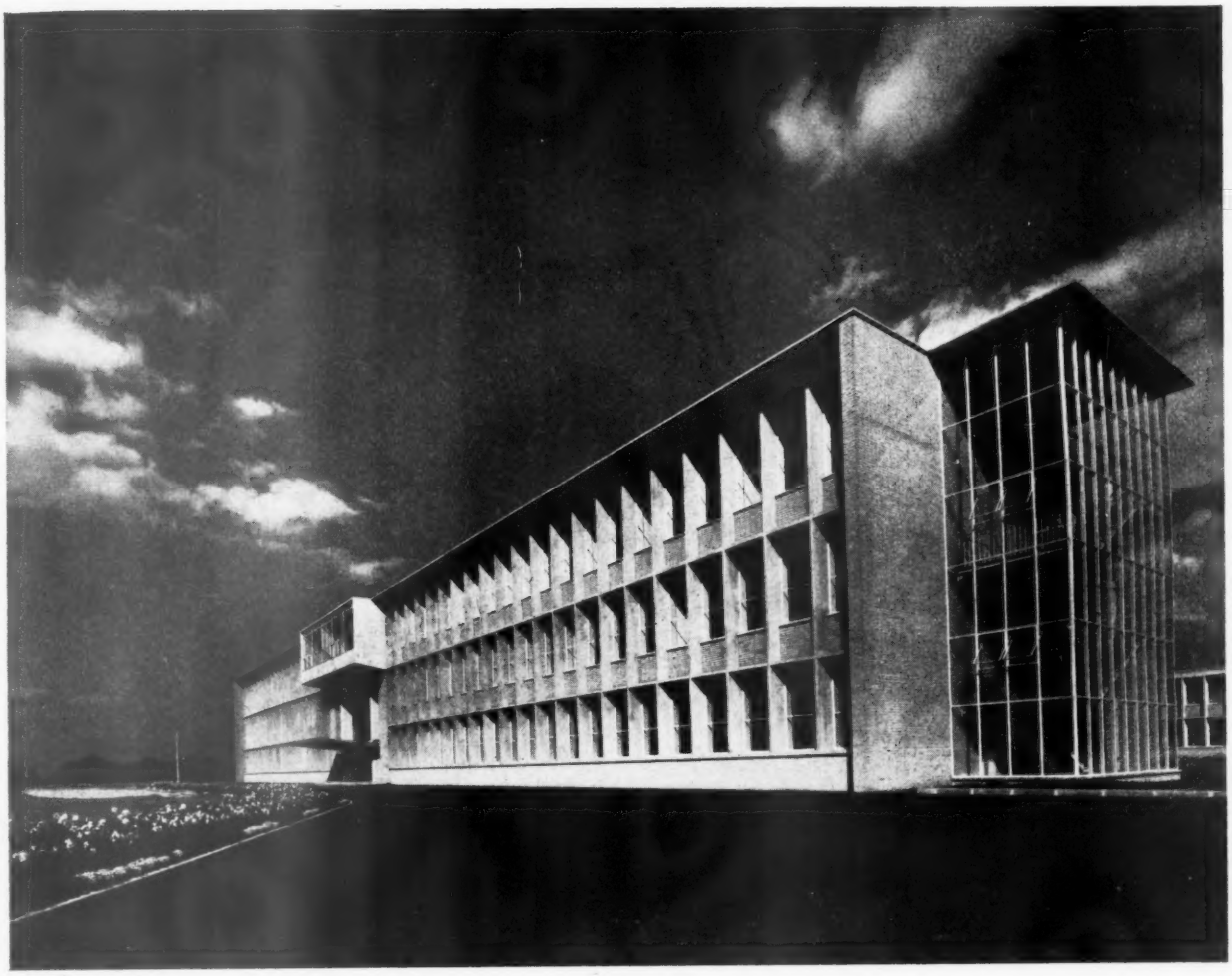


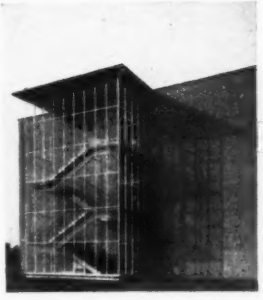
South facade of centre block.

This building, which houses the head office and central selling and administrative organization of Renold Chains Ltd., is situated nine miles south-west of Manchester. The site is at the junction of the Styal and Ringway Roads and includes extensive gardens, partly laid out during the building period. All rooms overlook lawns, and those facing west have a fine view of the Pennines, eight miles away. The staff were moved to Wythenshawe when office accommodation in the clients' Manchester factory was converted into workshops.

The offices from the south-west.





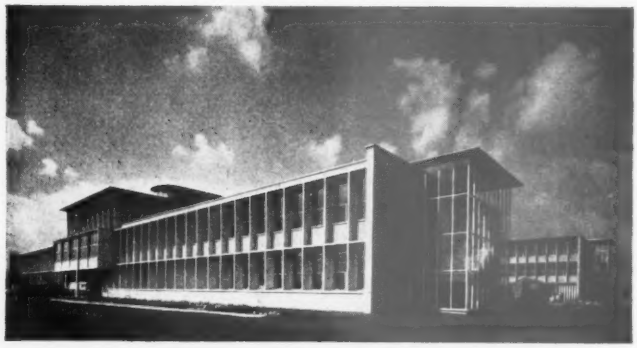


Above, the front wing and main entrance from the south-west. The cladding to the projecting board room on the second floor, over the main entrance, will be illustrated as a Working Detail in a later issue of the JOURNAL. *Right, secondary staircase at one end of the west wing.*

PLAN.—The building is planned symmetrically about an east-west axis in the shape of an H. The two parallel wings contain general and private offices. The central wing is largely made up of filing and record rooms, stores, cloakrooms and lavatories. A suite of rooms for directors' meetings is situated in a cantilevered structure over the main entrance on the west facade. The rear wing, on the west side, is now two-storeyed, but will have a third floor added later. The internal layout had to be flexible, and uninterrupted ceilings in each block allow the sectional partitions to be re-arranged in any desired layout. Desks are arranged at 6-ft. centres and have telephone and electrical services brought to them in concealed floor channels.

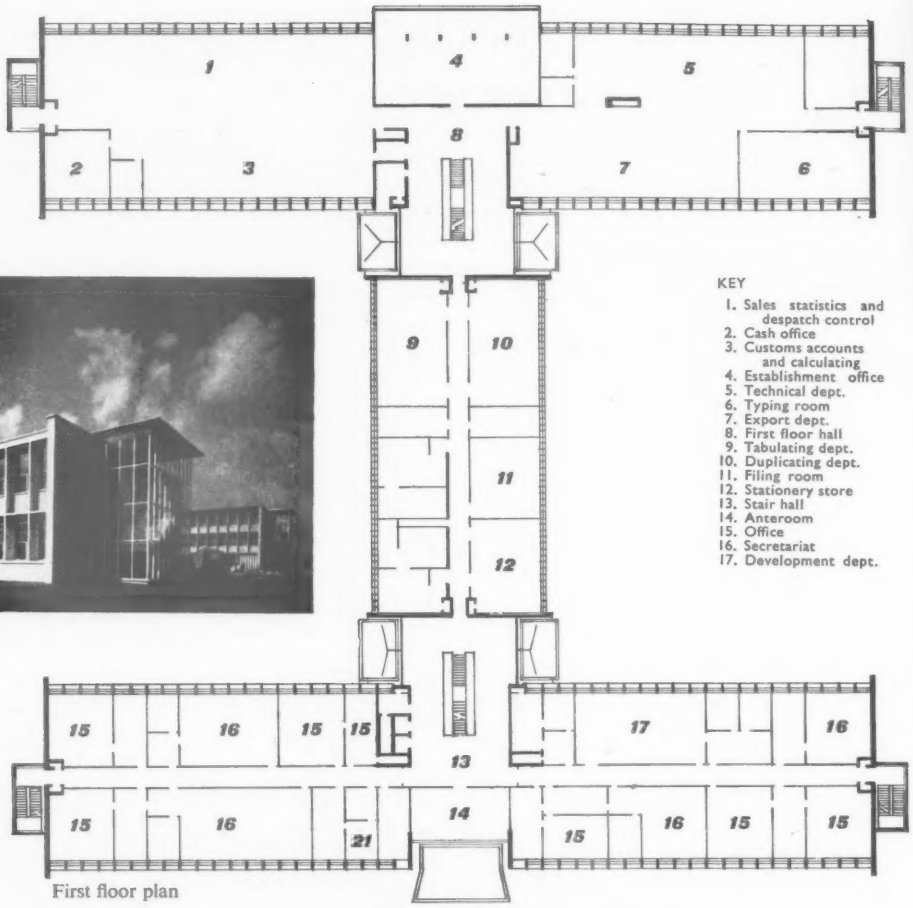
CONSTRUCTION.—The desk layout determined the structural grid, and the vertical fins are spaced at 6-ft. centres. These fins are 5-in. wide, which was found to be the minimum practicable dimension for efficient jointing. The construction throughout is of *in situ* reinforced concrete expressed in the two parallel wings as a honeycomb of vertical and horizontal fins. The system possesses a high resistance to wind pressure and eliminates the transfer of large bending moments to the flooring system. The centre wing has glass block walls standing in front of the structural frame, subdivided by mullions and

Below, the rear block from the north-east. This block is designed for the addition of an extra storey at a later date.



OFFICES

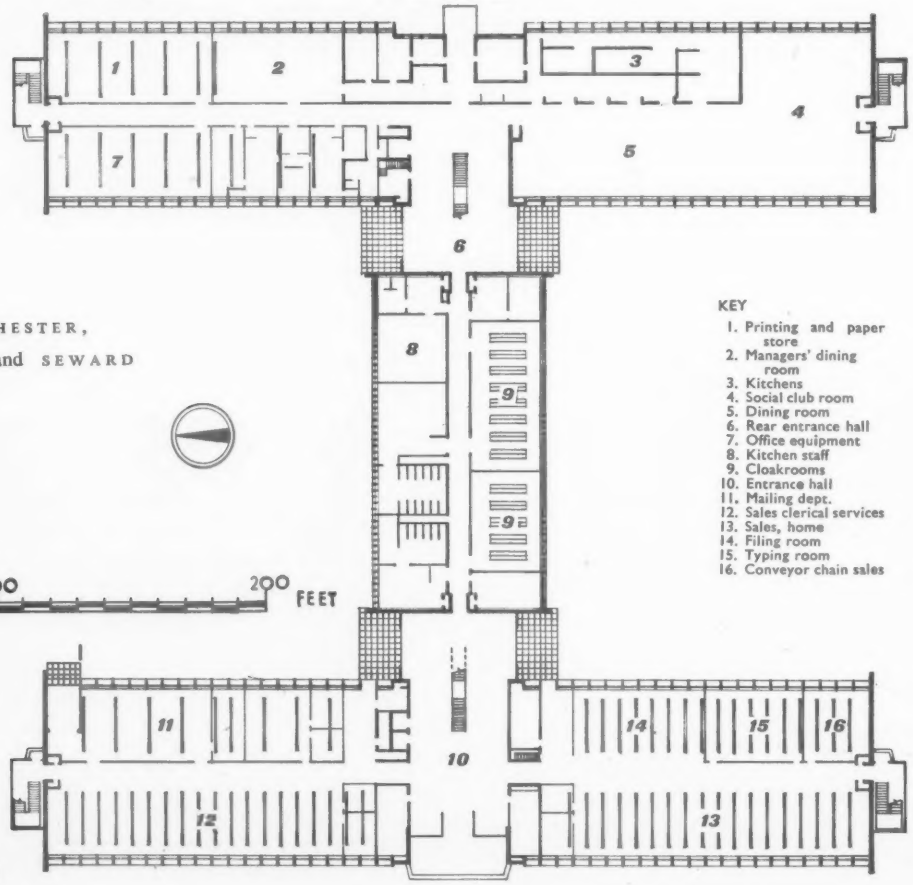
at WYTHENSHAWE, MANCHESTER,
designed by CRUICKSHANK and SEWARD



KEY

1. Sales statistics and despatch control
2. Cash office
3. Customs accounts and calculating
4. Establishment office
5. Technical dept.
6. Typing room
7. Export dept.
8. First floor hall
9. Tabulating dept.
10. Duplicating dept.
11. Filing room
12. Stationery store
13. Stair hall
14. Anteroom
15. Office
16. Secretariat
17. Development dept.

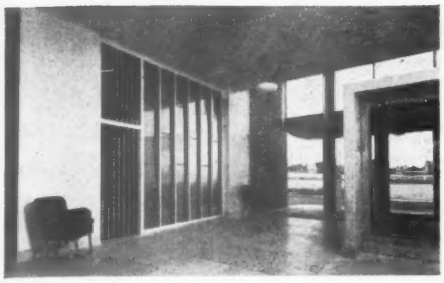
First floor plan



KEY

1. Printing and paper store
2. Managers' dining room
3. Kitchens
4. Social club room
5. Dining room
6. Rear entrance hall
7. Office equipment
8. Kitchen staff
9. Cloakrooms
10. Entrance hall
11. Mailing dept.
12. Sales clerical services
13. Sales, home
14. Filing room
15. Typing room
16. Conveyor chain sales

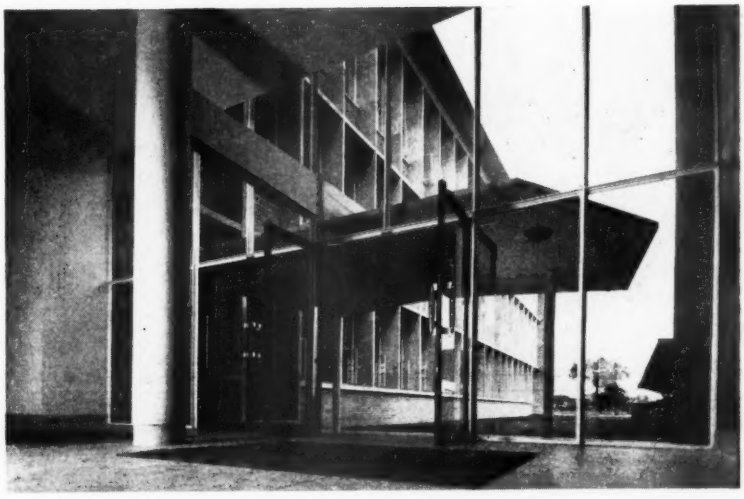
Ground floor plan





Above, main entrance hall. On the left, screen to interview room. Right, the main entrance in the west block. Centre right, one of the entrances to the centre block. Bottom right, the board room, which is situated in a cantilevered structure on the west facade.

transomes of precast r.c. The centre wing is divided from the front and rear wings by fully-glazed staircase towers. The secondary staircases at either end of the east and west wings are bracketed from the end framing of the wings and project clear of the brick end walls.



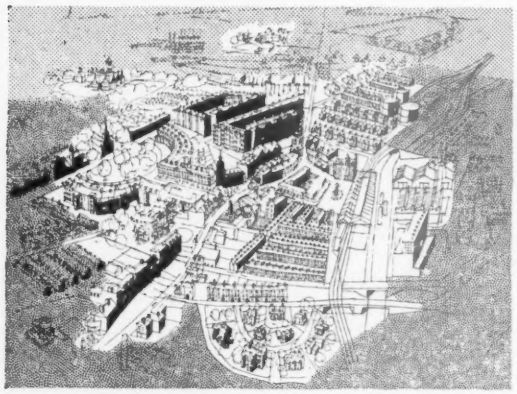
FINISHES.—Generally external walls are faced with golden-brown handmade bricks, contrasting in colour and texture with the exposed concrete members, which have a natural, rubbed-down finish. Two large areas of concrete walling in the rear wing have an overall recessed pattern externally, formed by attaching shaped panels to the sheeting. The recesses are emphasised by being painted blue-grey. The projecting structure above the main entrance, containing the board room suite, is faced externally with cream travertine. Internally terrazzo is used for floors of main halls and landings and for staircases, and thermoplastic tiles are used for secondary halls. Office floors consist of linoleum on a ¼-in. asphalt underlay. Board rooms are close-carpeted and the approach corridor has a cork tile finish.



SERVICES.—Heating is by electrode boiler plant and thermal storage vessels charged at "off-peak" periods. Low pressure hot water is circulated through thermostatically controlled convectors recessed beneath the windows. Electrical and other services are distributed by vertical ducts and local distribution is in floor channels with removable covers. Internal plumbing is also concealed in accessible ducts.

The general contractors were J. Gerrard & Sons Ltd.

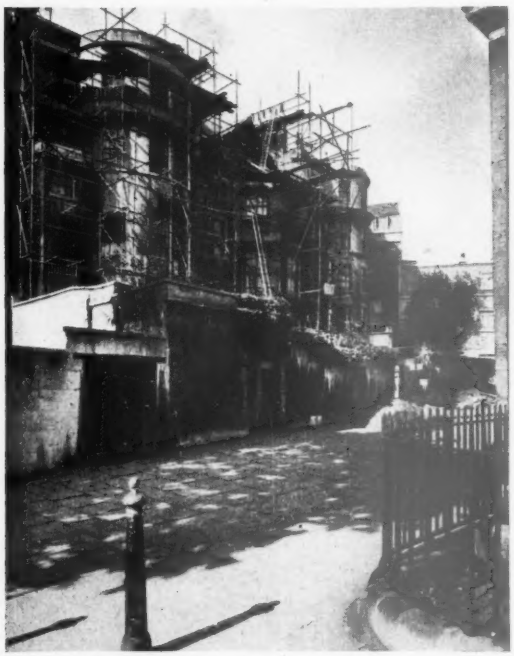
For sub-contractors see page 724.



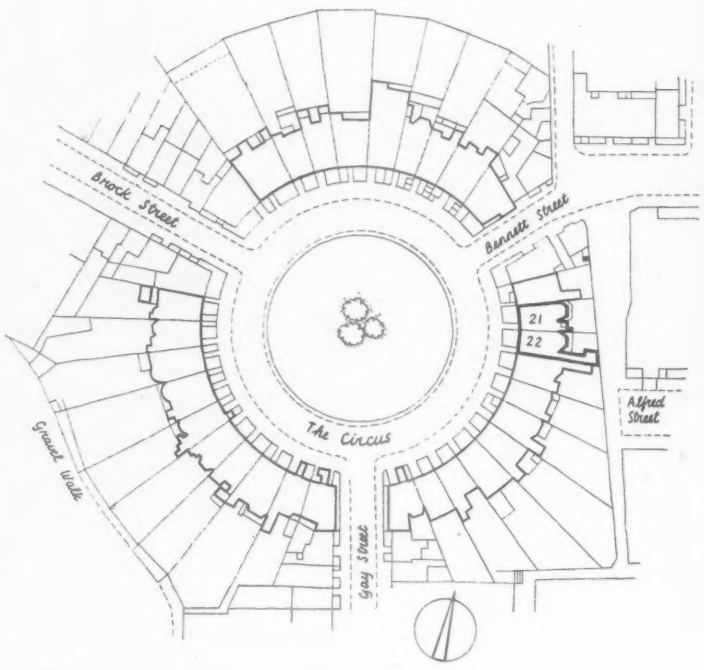
Earlier in the year the JOURNAL'S *Guest Editor for* 1954, *Felix Walter, wrote several articles on the conversion of large dwellings into units of accommodation. Since then he has been making a study of all aspects of the question of conversions, and the results of his investigation are being published in a series of articles which began on November 25 with "Housing Improvements." Last week he wrote about conversions or improvements in buildings of special architectural or historic interest. This is continued below. Next week we are publishing a special issue on problems of conversion and improvement.*

CONVERSIONS AND IMPROVEMENTS IN

HISTORIC BUILDINGS



The rear of Nos. 21 and 22 during reconstruction

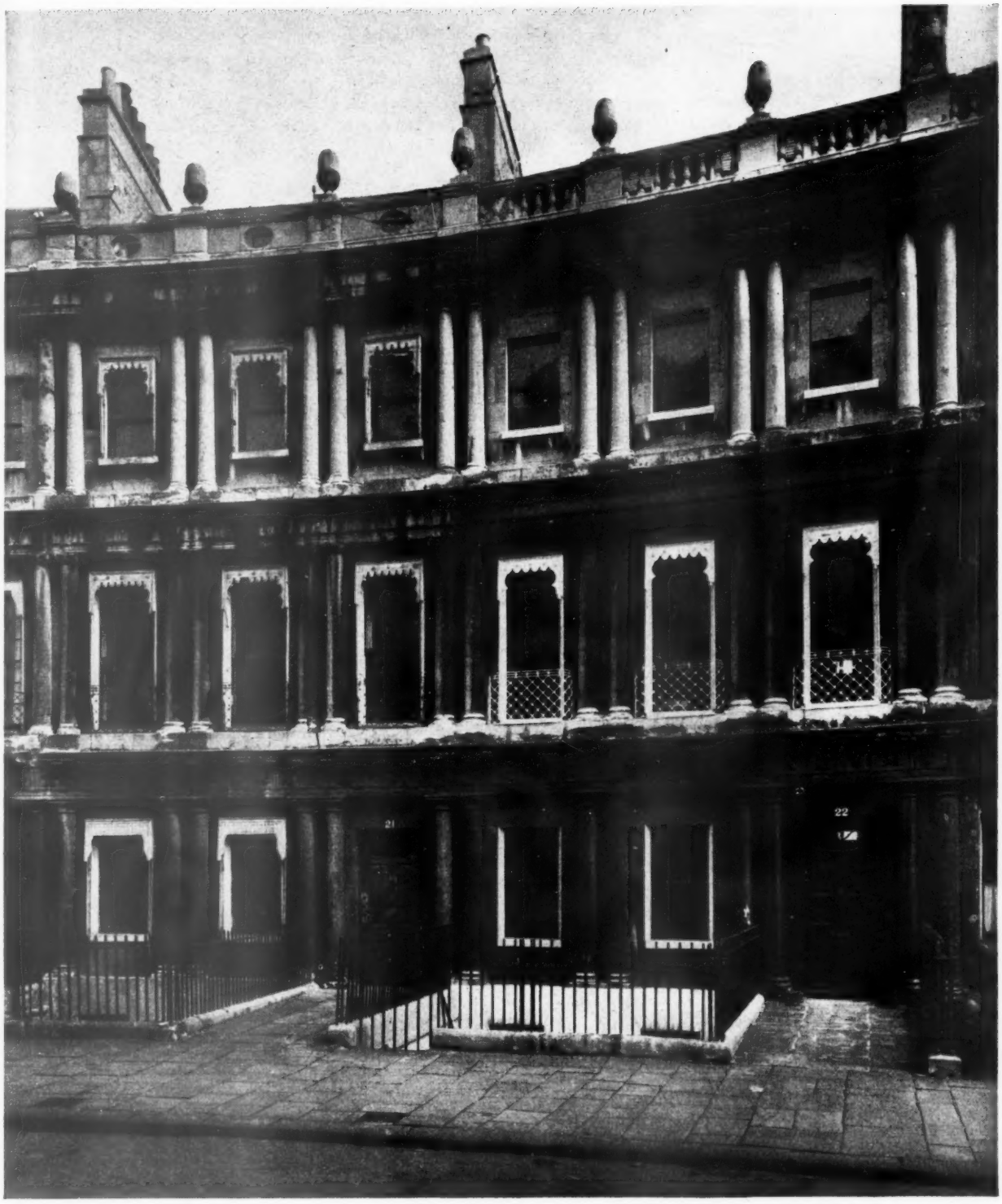


Site plan

21-22 The Circus, Bath

Architect : J. G. Wilkinson

THE SCHEME: *In the City and County Borough of Bath, the present stock of housing units could be increased by about* 1,200 *by the conversion of existing houses. In varying degrees this applies to all the larger cities and towns throughout the country, but in Bath the problem is rather different owing to its concentration of houses of unusual architectural interest. The classical regularity of its many beautiful facades and the fine details within so many of these old houses calls for something more than piecemeal and/or thoughtless conversion. Time and the elements have had their effect on the stone details of John Wood's Circus and after two centuries much of*

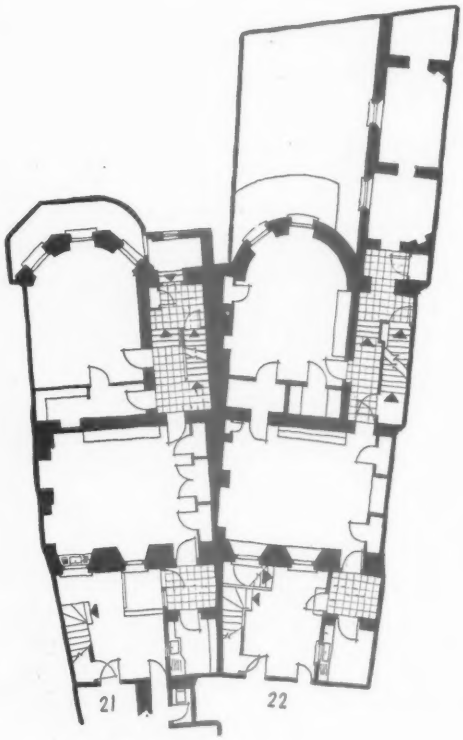


this needs attention before excessive expenditure prohibits repair and renewal; but even now repairs to stonework absorb large sums in the conversion and repair bill. The two houses illustrated are the first to be converted in the Circus by the City authority, who will provide two maisonettes and two flats in each—and it is the authority's intention to apply similar treatment to the remaining houses over a period and as they become vacant.

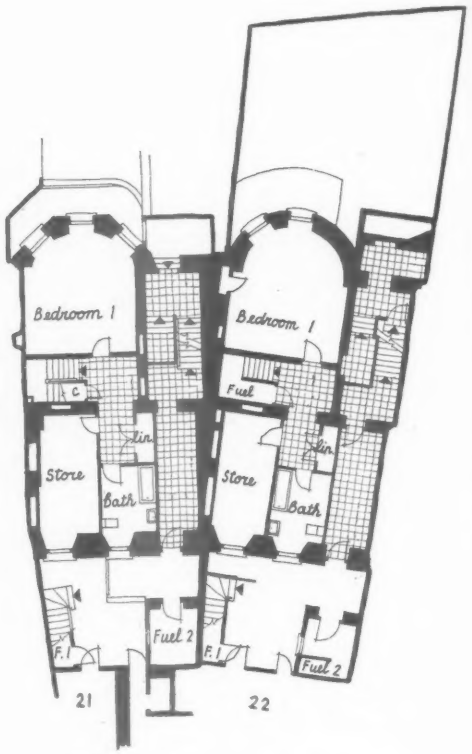
PLANNING DETAILS: *An unusual feature is that some houses contain sub-basements as well as basements, but the former are too inadequately lit and ventilated, and the ceiling heights are too low, to be of very much use. The almost stately main rooms which overlook the Circus at ground and first floor levels have ceiling heights of about 12 ft. and 12 ft. 6 in., and once these have been subdivided into rooms that are one third or two thirds of the existing floor area, the original proportions will have been lost. To overcome excessive height under new conditions, false ceilings are to be provided. Although one may*

deprecate the loss of the rooms as conceived originally, the main elevation is at least retained intact. But it is sad to find that false ceilings have also crept into rooms which have not been subdivided on these floors. In such circumstances one tends to dream of the philanthropic city councillors who subsidise fuel bills of tenants whose ceilings exceed ten feet in height! Back elevations are generally less distinguished than the main facades; thus in Bath, as elsewhere, it is not unreasonable to introduce mezzanine floors and to reconstruct back elevations to solve this ceiling problem—and to increase, at the same time, the lettable floor area.

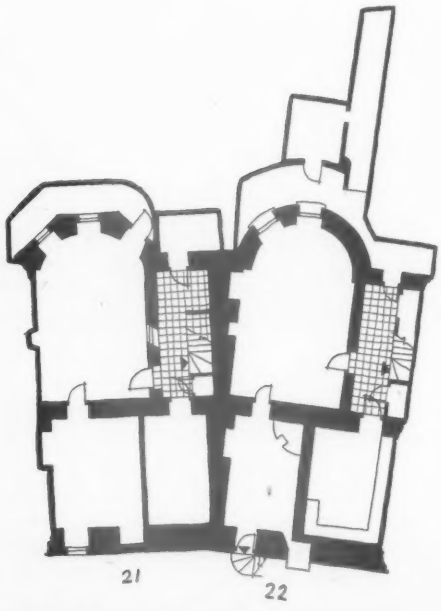
Taken in all, Bath's problem in converting this type of property is extremely complex. Behind these geometrical facades, which must be left severely alone, are gracious rooms and interesting



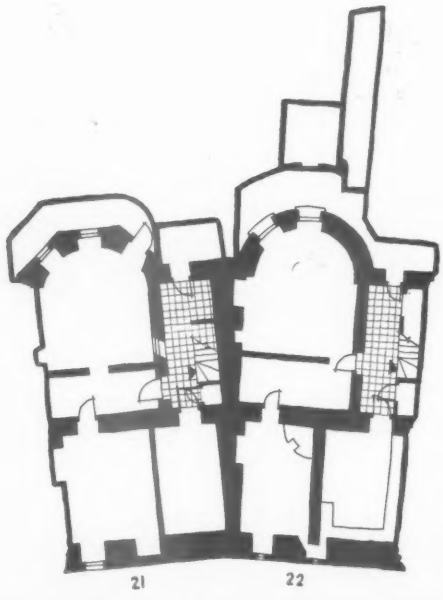
Basement before



Basement after



Sub basement before [Scale : $\frac{1}{16}$" = 1' 0"]



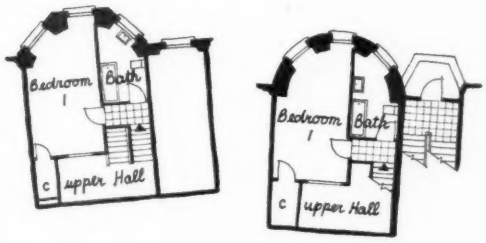
Sub basement after

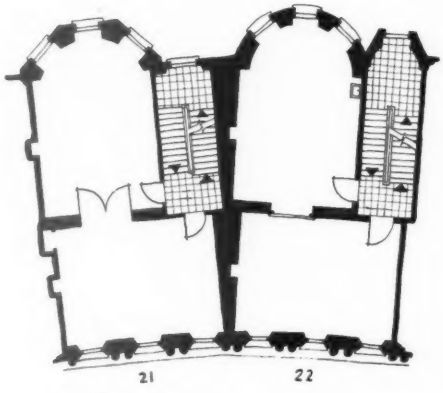


"....facades must be left severely alone."

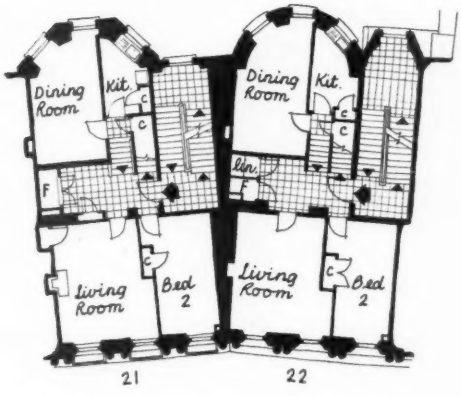
details, but the scale is too great for homes of today. If they are not used they will decay, and to use them economically involves sub-division not only of simple rectangular rooms, but also of those with large bow windows which do not lend themselves to partition. Any rearrangement calls for exceptional ingenuity and a sympathetic understanding of our legacy from the 18th century.

SERVICES: *Hot water heating is provided in each unit by electric storage heaters and/or con-*

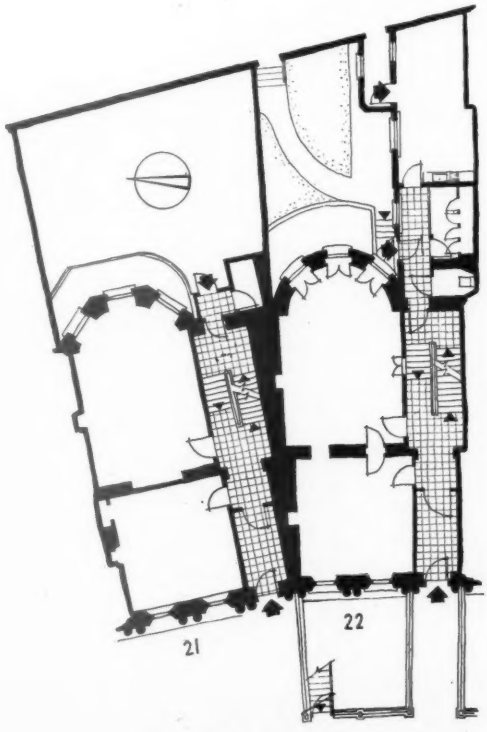




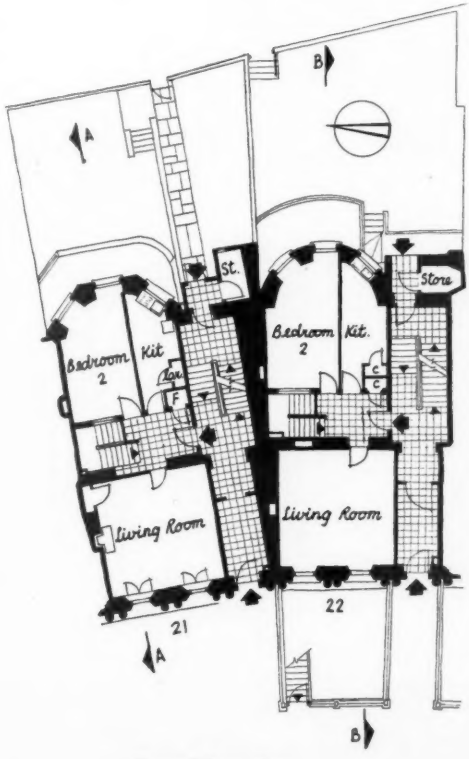
First floor before



First floor after



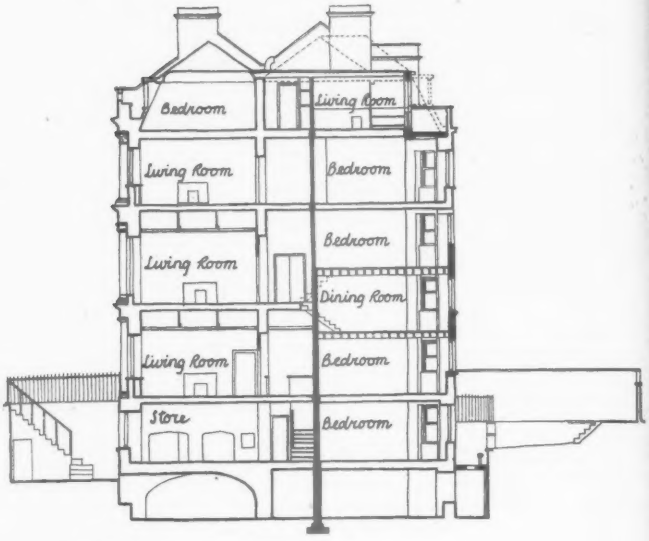
Ground floor before



Ground floor after



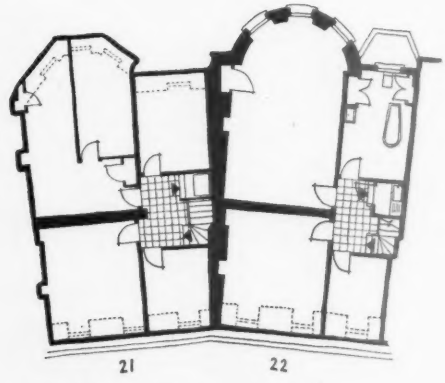
Section A-A (new construction solid)



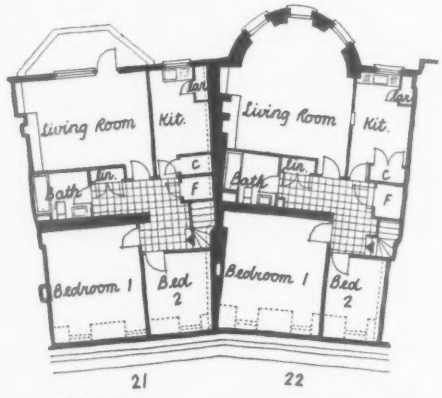
Section B-B

tinuous burning fires with back boilers. Most bedrooms have built-in electric fires for space heating.

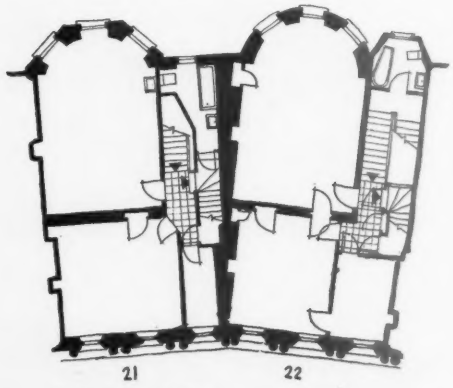
COST AND RENTS: *The cost of converting the two houses into four flats and four maisonettes amounts to £10,789 8s. 8d. This lowest tender figure has been approved by the Ministry of Housing and Local Government and the work is proceeding. Maisonettes will be let at approximately £90 p.a. and flats on an average of £55, both exclusive of rates.*



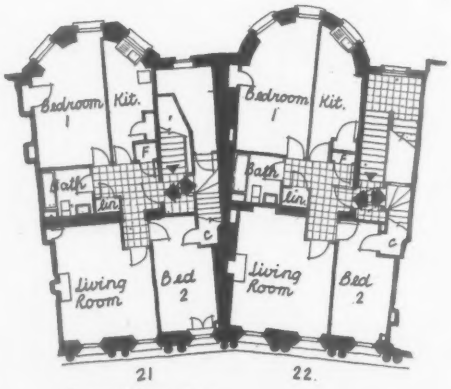
Third floor before



Third floor after



Second floor before

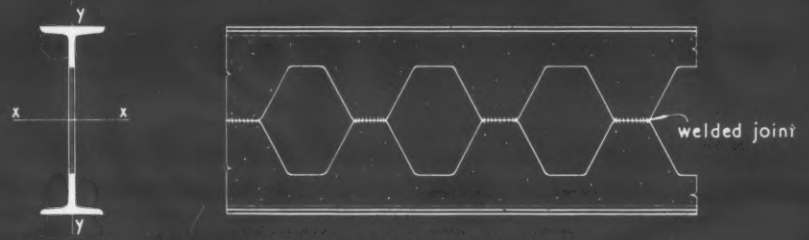


Second floor after



FLOOR AND ROOF STRUCTURAL ELEMENTS STEEL

The Architects' Journal Library of Information Sheets 497. Editor: Cotterell Butler, A.R.I.B.A.



SECTION AND ELEVATION OF TYPICAL BEAM.

Castella beam.	min. equivalent joist or compound section.
36″ x 7½″ x 95 lb.	24″ x 7½″ with 12″ x ¾″ plate on each flange (160 lb.)
27″ x 8″ x 80 lb.	22″ x 7″ with 12″ x ⅜″ plate on each flange (110 lb.)
27″ x 7″ x 75 lb.	24″ x 7½″ x 95 lb.
21″ x 6″ x 57 lb.	20″ x 6½″ x 65 lb.
15″ x 5″ x 30 lb.	15″ x 5″ x 42 lb.
7⅛″ x 1¾″ x 6·5 lb.	5″ x 3″ x 11 lb.

COMPARATIVE TABLE OF WEIGHTS.

size of Castella beam (in.)	safe distributed loads in tons for spans in feet																																		
	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	
18 x 8										36·0	35·0	32·4	30·4	27·0	24·0	21·7	19·5	17·5	15·4	14·2	13·0	12·0	10·7	9·8	9·0	8·4	8·0	7·4	7·0	6·7	6·4	6·2	6·0	5·5	
18 x 6 H							45·2	41·3	36·5	33·0	29·7	27·5	25·2	23·5	21·2	18·7	16·5	15·0	13·3	11·9	11·0	10·0	9·2	8·5	8·0	7·4	6·8	6·3	6·0	5·5	5·2	4·9			
18 x 6 L									29·7	28·5	25·5	23·4	21·7	20·0	18·0	15·7	13·7	12·3	11·2	10·0	9·0	8·3	7·7	7·0	6·5	6·0	5·5	5·2	5·0						
18 x 5									20·7	18·5	17·0	15·5	14·5	13·5	12·0	10·7	9·2	8·2	7·4	6·7	6·0	5·6	5·0	4·7											
15 x 8 H					58·0	52·2	46·0	40·9	36·9	33·0	30·5	26·0	22·5	19·5	17·2	15·2	13·7	12·2	11·0	10·0	9·0	8·2	7·7	7·0	6·5	6·0	5·5	5·2	5·0						
15 x 8 L								32·4	30·2	27·5	25·3	21·7	18·7	16·4	14·2	12·5	11·4	10·2	9·2	8·4	7·7	7·0	6·3	5·7	5·3	5·0									
15 x 6							25·7	23·7	21·3	19·3	17·7	15·0	13·0	11·4	10·0	8·8	7·8	7·1	6·4	5·8	5·3	4·8													
15 x 5					25·2	21·8	19·2	17·0	15·4	13·7	12·5	10·6	9·3	8·2	7·2	6·35	5·7	5·1	4·5	4·1	3·7	3·4	3·0												
15 x 4½						16·0	15·8	14·0	12·7	11·5	10·5	8·8	7·7	6·7	5·9	5·2	4·6																		
13½ x 7						32·2	31·0	27·5	24·6	21·6	18·2	15·6	14·7	12·0	10·8	9·4	8·5	7·5	6·8	6·0	5·5	5·2	4·9												
13½ x 4				17·2	15·4	13·2	11·6	10·2	9·2	8·2	7·0	5·7	5·0	4·4	3·8																				
12 x 6					23·2	21·0	18·5	16·5	14·0	11·6	9·7	8·3	7·2	6·3	5·5	4·9	4·3																		
12 x 4				14·0	12·0	10·2	9·0	8·0	6·8	5·5	4·6	4·0	3·5	3·0	2·5	2·2	2·0																		
10½ x 4				11·6	9·7	8·4	7·4	6·0	4·8	4·0	3·4	3·0	2·5	2·1	2·0																				
9 x 3		10·2	9·0	7·2	6·1	5·2	4·1	3·3	2·6	2·1	1·8	1·6	1·4	1·2	1·1																				
7½ x 3		9·2	7·0	5·5	4·5	3·5	2·6	2·0	1·5	1·2	1·1	1·0																							
7⅛ x 1¾	6·4	4·7	3·5	2·8	2·2	1·6	1·2	1·0																											

TABLE OF SAFE DISTRIBUTED LOADS.

note: see reverse of Sheet for notes on use of table.

·CASTELLA· BEAMS (Patent No. 498281) : 2. Manufacturer : United Steel Structural Company Limited.

20.C4 'CASTELLA' BEAMS (*Patent No. 498281*) : 2

Size		Wt. per ft. (lb.)	Area of web (sq. in.)		Thickness (in.)		Moments of Inertia (in.)⁴		Moduli of Section (in.)³		$\frac{rxx}{ryy}$
Original Section	Castella Beam		Gross	Nett	Web	Flange	Axis *x-x*	Axis *y-y*	Axis *x-x*	Axis *y-y*	
12 × 8	18 × 8	65	21·70	16·54	0·43	0·904	1162·8	65·14	129·2	16·3	4·3
12 × 6 H	18 × 6	54	18·89	12·89	0·50	0·883	893·4	28·22	99·3	9·4	5·8
12 × 6 L	18 × 6	44	15·40	10·60	0·40	0·717	767·4	22·09	85·3	7·3	6·1
12 × 5	18 × 5	32	11·55	7·35	0·35	0·550	515·5	9·67	57·3	3·8	7·6
10 × 8 H	15 × 8	70	23·60	17·60	0·60	0·970	834·1	71·58	111·2	17·9	3·5
10 × 8 L	15 × 8	55	18·18	14·18	0·40	0·783	689·0	54·71	91·9	13·6	3·6
10 × 6	15 × 6	40	13·57	9·97	0·36	0·709	484·8	21·74	64·7	7·2	4·9
10 × 5	15 × 5	30	10·65	7·05	0·36	0·552	345·4	9·71	46·1	3·9	6·2
10 × 4½	15 × 4½	25	8·85	5·85	0·30	0·505	284·2	6·48	37·9	2·9	6·9
9 × 7	13½ × 7	50	16·51	12·91	0·40	0·825	501·3	40·15	74·3	11·4	3·6
9 × 4	13½ × 4	21	7·53	4·83	0·30	0·457	188·2	4·14	27·9	2·0	7·0
8 × 6	12 × 6	35	11·70	8·90	0·35	0·648	265·7	19·52	44·3	6·5	3·8
8 × 4	12 × 4	18	6·42	4·18	0·28	0·398	129·4	3·50	21·6	1·7	6·3
7 × 4	10½ × 4	16	5·62	3·87	0·25	0·387	92·8	3·36	17·7	1·6	5·4
6 × 3	9 × 3	12	4·22	2·84	0·23	0·377	49·6	1·45	11·0	0·97	6·0
5 × 3	7½ × 3	11	3·81	2·71	0·22	0·376	31·6	1·44	8·4	0·96	4·8
4½ × 1½	7⅛ × 1½	6·5	2·33	1·48	0·18	0·325	15·2	0·25	4·3	0·29	8·0

This Sheet is the second of two dealing with Castella beams. The principle and construction of the beams is described on Sheet 20.C3. The drawing on the face of this Sheet shows a typical beam and specimen figures are given for the purpose of comparing the weights of Castella beams with traditional sections. The table gives safe distributed loads for the smaller range of beam sizes: loads for the larger range are given on the face of Sheet 20.C3, together with a diagram illustrating how the beams are made. The tables on the reverse of the two Sheets give other dimensions and properties of the beams.

Use of Table of Safe Distributed Loads

The loads given in the table on the face of the Sheet are calculated in accordance with the requirements of BS 449: 1948, *The Use of Structural Steel in Buildings*, and are based on the assumption that the compression flanges are adequately supported over the span; consequently the permissible extreme fibre bending stress is 10 tons per sq. in.

The maximum uniformly distributed load on a Castella beam with compression flanges supported is controlled by the value of the web in buckling and is referred to the web at each castellation on the neutral axis of the beam. This maximum safe load refers to open castellations and is shown in the tables by the figures between the dotted lines. This buckling value may be increased by filling the end castellations and the maximum uniformly distributed load in this condition corresponds to the extreme left hand figure in the tables. Bearing lengths for these values are:—

1 in. for all beams over 13½ in. × 4 in.

½ in. for smaller sections.

Web crushing has been taken into account. All loads to the right of the heavy full line have been reduced so that deflection is not greater than 1/325 of the span.

Compiled from information supplied by:
United Steel Structural Company Limited.
Address: Frodingham Works, Scunthorpe, Lincolnshire.
Telephone: Scunthorpe 3411.
London Office: 40, Grosvenor Gardens, London, S.W.1.
Telephone: Sloane 7171.

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Arc

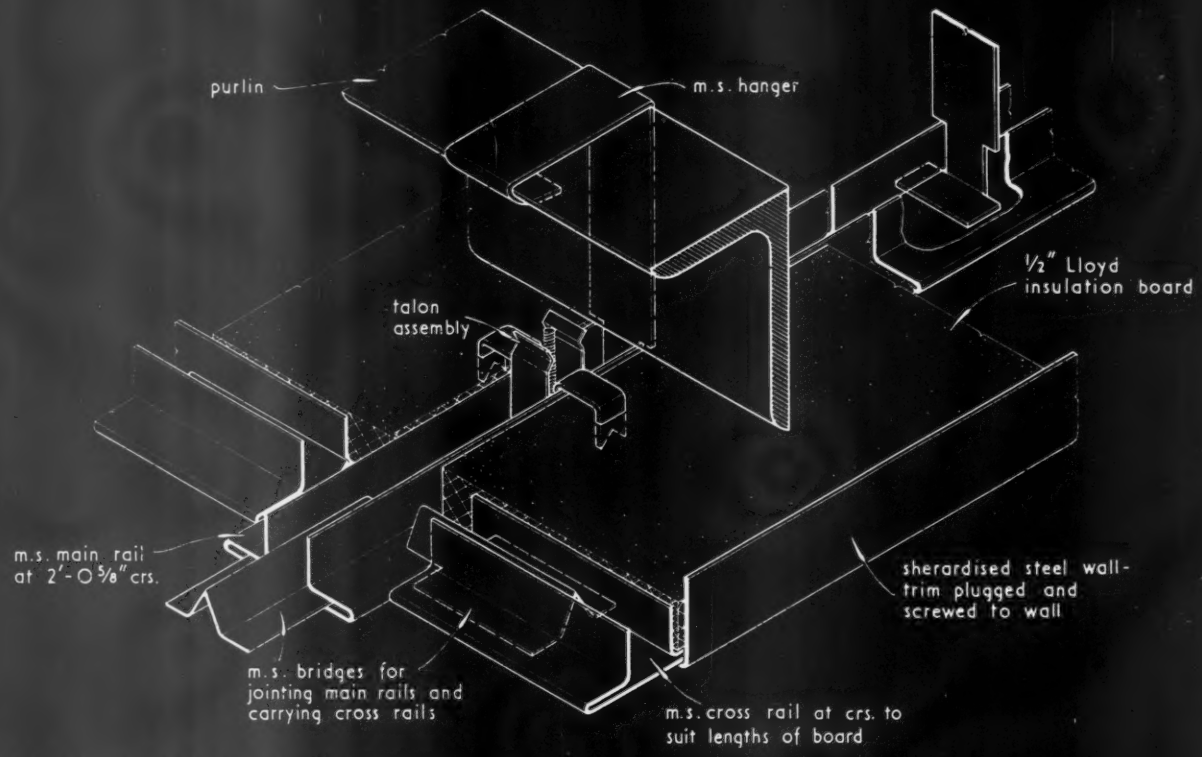
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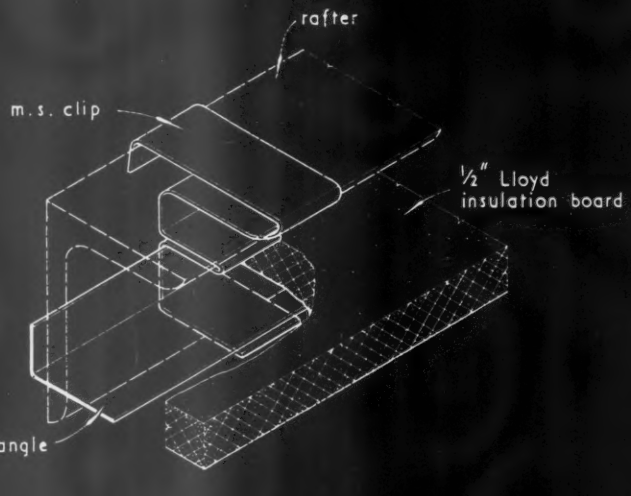
Architects' Journal 9.12.54

CEILINGS | BUILDING BOARD

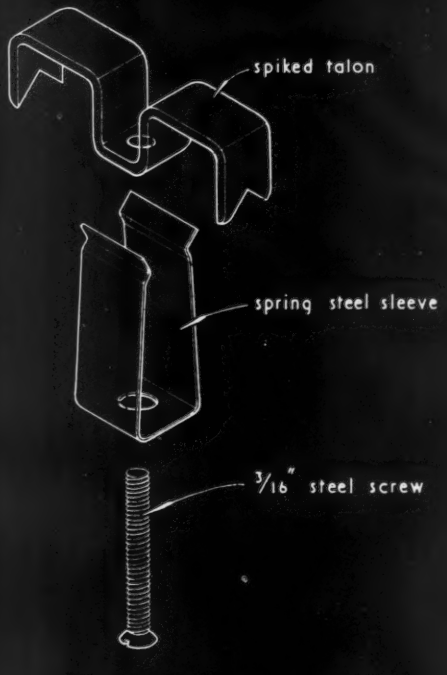
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GENERAL ASSEMBLY OF COMPONENT PARTS.



DETAIL OF FIXING TO RAFTER.



DETAIL OF TALON ASSEMBLY.

LLOYD L.T.I. SYSTEM OF BOARD FIXING. (Patent No. 608156)

Manufacturer : Bowaters Building Boards Ltd.

22.D1 LLOYD L.T.I. SYSTEM OF BOARD FIXING

This Sheet describes a system of board fixing consisting of Lloyd standard insulation board and supporting and jointing members of pressed steel section. It is so designed that it can be applied, without the necessity for drilling, to roof or ceiling structures of steel, concrete or timber. The metal supports may be fixed with ease to rafters, purlins or beams of many shapes, including angle, channel, tubular and rectangular cross sections. The system is arranged so that the boards may be fixed either horizontally to form a suspended ceiling or parallel to the roof as a lining. When used as a ceiling, the boards and supports may be suspended from the roof structure on long hangers or from the ceiling or floor members. When used as a roof lining the system is suitable for fixing either below or above the rafters. The boards are secured to the metal supports by means of screw and talon assemblies which ensure freedom from vibration, disturbance by wind pressure, etc.

Components

Main rails: These are pressed from 18 gauge mild steel. The standard section is 2 in. wide with ½ in. upstands and is in lengths from 6 ft. 0 in. to 12 ft. 0 in. in 1 ft. 0 in. increments. The maximum span for this section is 5 ft. 6 in.

Cross rails: These are of the same section as the main rails in standard lengths of 1 ft. 11¾ in.

Bridges: These are short sections of pressed steel which are inserted in the ends of the main rails for jointing and into the ends of cross rails to connect them to the main rails.

Hangers: The main rails are suspended from the roof or floor structure by means of mild steel hangers, shaped at the lower ends for insertion in the rails.

Talon assemblies: These each consist of screw, sleeve and spiked talon. The screws pass through countersunk holes in the rails at 12 in. centres and engage the talons, the spikes of which take a firm grip on the edges of the boards. The talons can be detached from the underside of the ceiling to give access for roof inspection, etc.

Trimming sections: Pressed steel angle sections are used for trimming boards at walls, openings, ridge, etc.

Insulation Boards

Lloyd standard insulation boards, ½ in. thick, 2 ft. wide and in lengths from 6 ft. 0 in. to 10 ft. 0 in. in 1 ft. 0 in. increments, are used with this system.

Finish

All steel components are sherardised.

Sound Absorption

The ½-in. insulation board has an average sound absorption coefficient of 0·3.

Thermal Insulation

Thermal resistance: For calculating the U value of ½-in. Lloyd insulation board, the thermal resistance can be taken as 1·43.

Thermal transmittance coefficients (U): The following tables give the U values for various constructions with or without Lloyd L.T.I. system of board fixing.

Pitched Roofs

Roof covering	U (unlined)	U (with lining under purlins)
Corrugated asbestos-cement ..	1·40	0·32
Corrugated protected metal ..	0·90	0·28
Clay tiles on battens and felt ..	0·70	0·26
Clay tiles on battens, felt and boarding	0·35	0·19

Flat Roofs

Roof construction	U (unlined)	U (with suspended lining)
6-in. reinforced concrete covered with asphalt	0·63	0·25
6-in. reinforced concrete with asphalt covering on 2-in. lightweight concrete screed ..	0·35	0·19
6-in. hollow tile or hollow concrete slab with asphalt covering	0·48	0·22
6-in. hollow tile or hollow concrete with asphalt on lightweight concrete screed ..	0·31	0·13
Metal decking covered with bitumen felt on ½-in. Lloyd insulation board	0·37	0·20

Intermediate Floors (Heat Flow Upward)

Floor construction	U (without ceiling)	U (with suspended ceiling)
6-in. reinforced concrete with 1½-in. granolithic finish ..	0·50	0·23
6-in. hollow tile or hollow concrete slab with 1½-in. granolithic finish	0·40	0·20

External Walls

Wall construction	U (without lining)	U (with lining clear of wall)
Corrugated asbestos-cement ..	1·20	0·30
Corrugated protected metal ..	0·82	0·27

Compiled from information supplied by:

Bowaters Building Boards Limited.
Address: Bowater House, Stratton Street, London, W.1.
Telephone: Grosvenor 4161.

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Frognal Grove, Hampstead

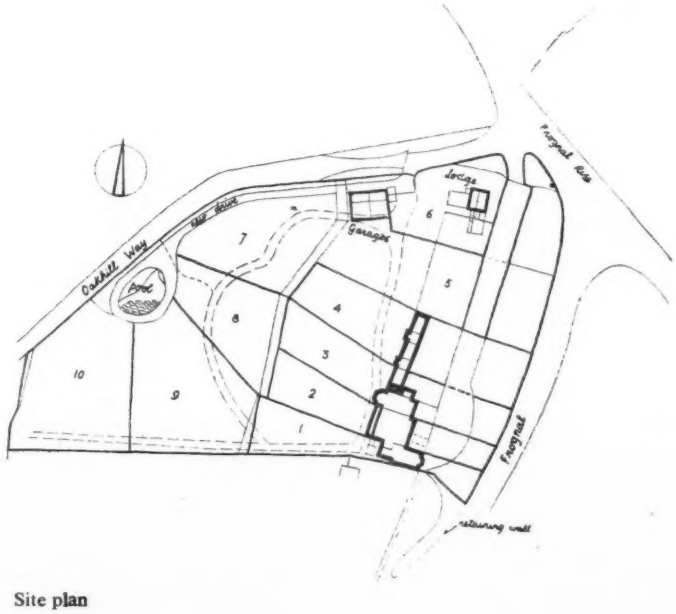
Architect: Melville Seth-Ward

THE SCHEME: *Frognal Grove once formed part of the Manor of Hampstead and the property was held for a while by Edmund Bolesworth, a perfumer in Temple Bar, who planted the lime walk to the grove which exists today. In 1741 the copyhold was acquired by Henry Flitcroft, better known, perhaps, as "Burlington Harry," who designed and erected the main house for his own use. Extensions were added in subsequent years but many of the cornices, fireplaces and much of the panelling are original; others were introduced by Edward Montagu, a Master in Chancery, around 1790. To make way for his new house, Flitcroft demolished some of the old buildings but the present garage, stable and cottage are believed to be part of the original farm buildings.*

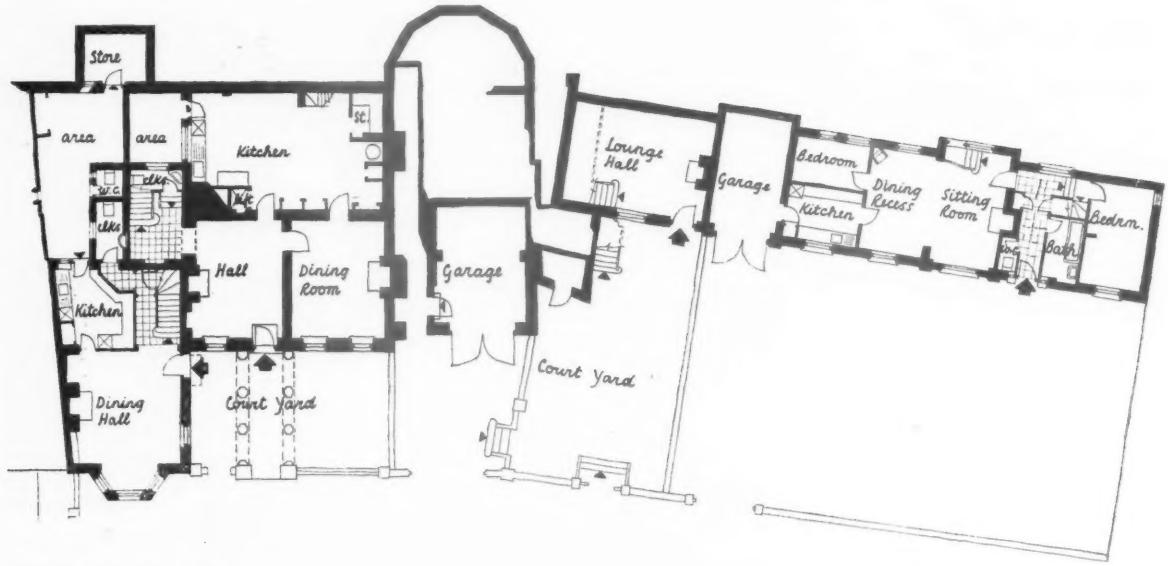
The vertical conversion of the main house follows the lines of the two additional wings added to Flitcroft's original house. Thus, each new house unit is of one period. The development provides three houses from the main block, a fourth from the stables and gardener's cottage and a fifth from what was formerly the lodge. In addition, five building plots are available—apart from the five gardens of the converted house units. (The units are shown by figures on the site plan).



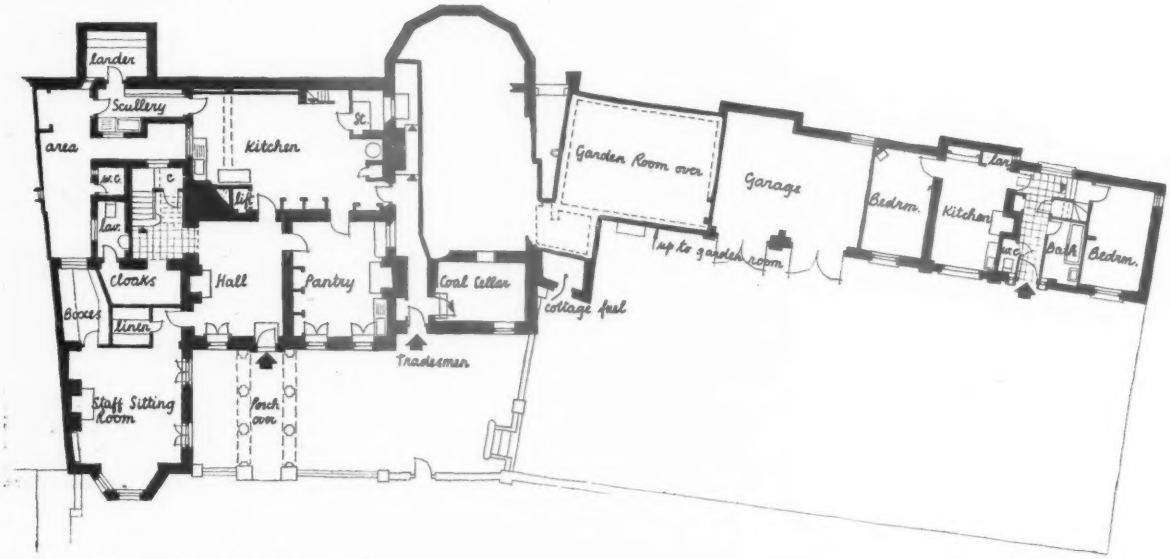
The second and third houses, seen from the east during conversion



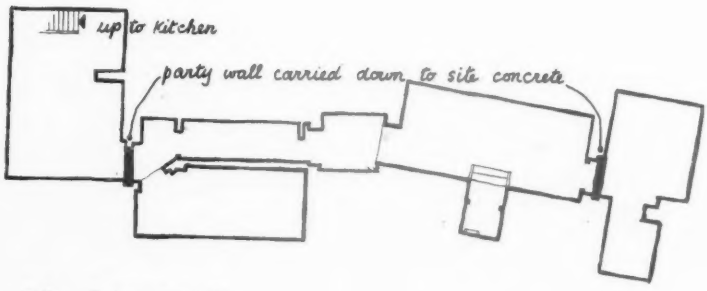
Site plan



Lower ground floor after



Lower ground floor before [Scale : $\frac{1}{8}$" = 1' 0"]



Cellar [Scale : $\frac{1}{8}$" = 1 0"

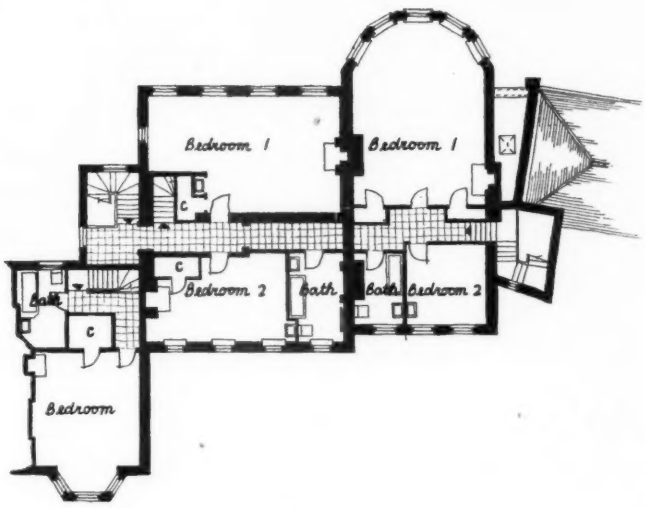
PLANNING DETAIL : *Before the present conversion, the house was occupied by a single family. The lower ground floor was absorbed almost entirely by the kitchen, pantry and staff rooms, and the ground floor by a number of reception rooms, whilst the first and second floors contained eight bedrooms and three bathrooms. Apart from the drawing room, which measured something like 44 ft. by 19 ft., the rooms throughout the house have been left intact, although the subdivision into separate houses has changed their purposes. Although a number of the rooms are very large this is an advantage to those with furniture of a scale to blend with them.*



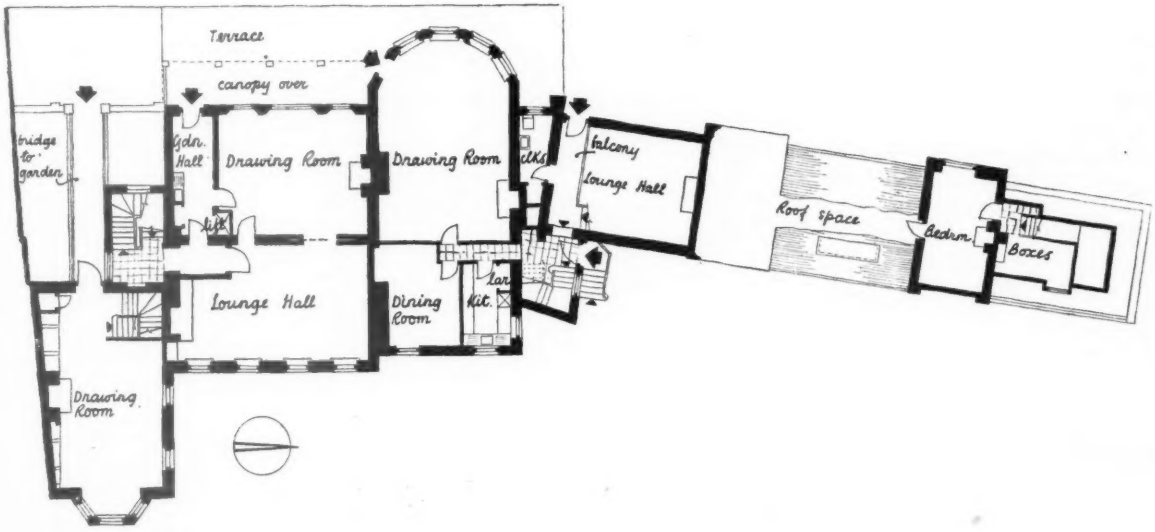
The west facade of unit No. 4 during conversion



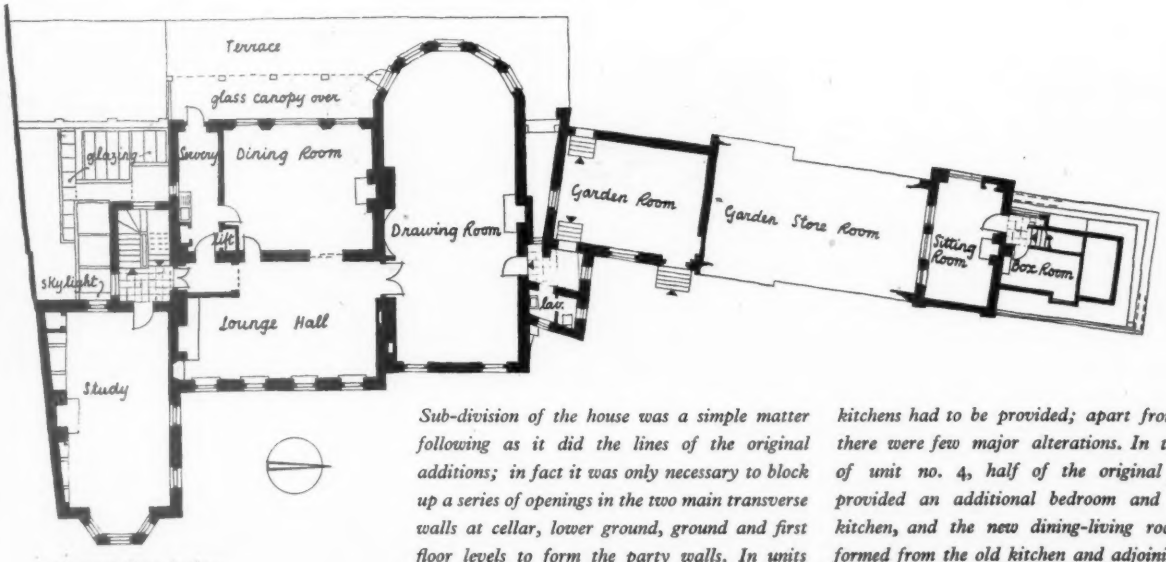
First floor before



First floor after

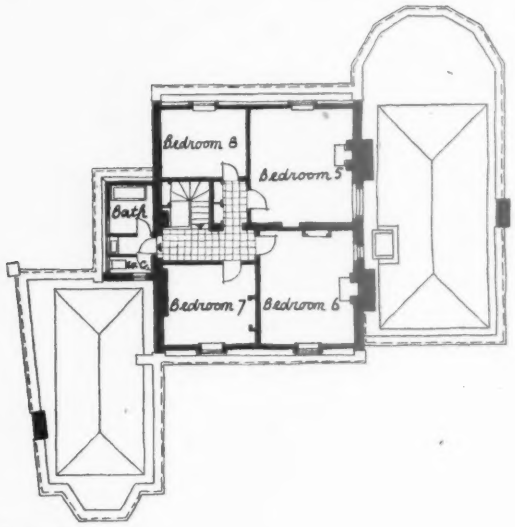


Ground floor after

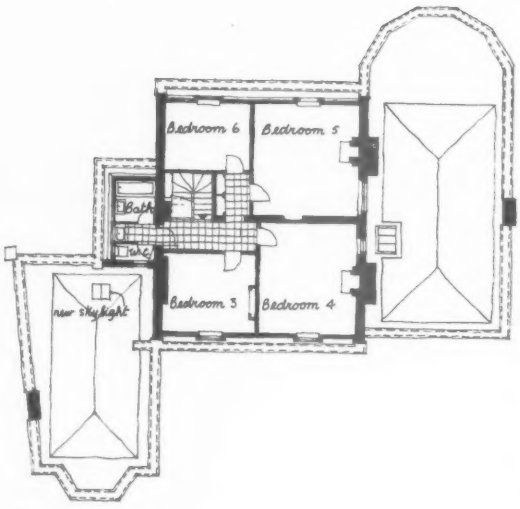


Ground floor before

Sub-division of the house was a simple matter following as it did the lines of the original additions; in fact it was only necessary to block up a series of openings in the two main transverse walls at cellar, lower ground, ground and first floor levels to form the party walls. In units nos. 1 and 3 (see site plan) new staircases and kitchens had to be provided; apart from these there were few major alterations. In the case of unit no. 4, half of the original garage provided an additional bedroom and a new kitchen, and the new dining-living room was formed from the old kitchen and adjoining bedroom.



Second floor before



Second floor after

The necessity for providing garages wherever possible has not been overlooked. Those of units nos. 3 and 4 are planned conveniently near for comfortable access but in the case of units nos. 1 and 2 the solution is rather less satisfactory, for these two garages are more than a hundred yards from the houses they serve. To have brought them nearer would have involved turn-abouts, the widening of the approach lane to the back gardens and a group of buildings overlooked by the other houses.

COSTS: *The total outlay on the conversion of units nos. 1-4 was approximately £10,000; divided between the four houses the cost per unit was:*

No. 1: south extension	*£2,500*
No. 2: original house	*£3,000*
No. 3: north extension	*£2,500*
No. 4: stables and attached cottage	*£2,000*

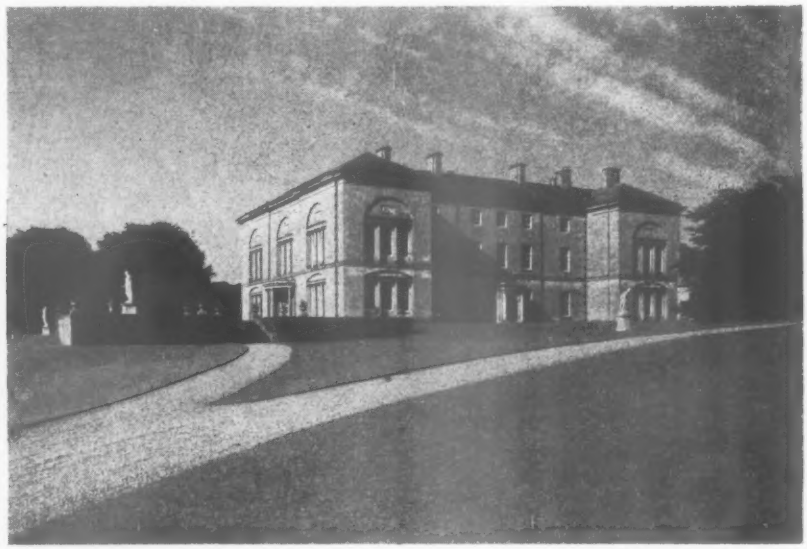
In addition, a further £1,000 was spent upon fences, paths, etc.

RATEABLE VALUES: *Before subdivision the gross value of the property, including the detached lodge which has been converted also, was £600 and the nett rateable value £497. Revised values have yet to be agreed with the authorities but the figures proposed are as follows:*

	Gross	*Nett*
	£	*£*
No. 1 ..	150	122
No. 2 ..	255	209
No. 3 ..	200	163
No. 4 ..	90	68

Sledmere, Yorks

Architect: J. B. Gold



Photographs: Country Life

THE SCHEME: *The social and financial conditions of our times have already driven many families from their ancestral homes, but before the ravages of weather and neglect reduce these mansions to mere ruins, a solution must be found to prevent further deterioration in this way. One method is to decrease floor area, by demolition to manageable dimensions. At Sledmere, a great stone mansion in an austere setting amongst the Yorkshire wolds, the principle of partial demolition has been applied with considerable success. As it stands today, Sledmere is an early 18th century house with late 18th century wings, and interior decorations by Joseph Rose, who was formerly Robert Adams's chief plasterer. In 1911, fire reduced the building to an empty shell but due to the preservation of the original carved box-wood moulds, the interior was restored to its original glory. At about the time of the first world war, enormous new kitchens and servants' quarters were added in the red brick early Georgian style, then in fashion, and these extensions, although covering a greater area than the main block of the house, were successively screened by old established trees. By 1945, the vast proportions of the house were far beyond the scale of present-day standards of entertainment and made it impossible to maintain sufficient domestic staff. It was decided therefore that all the 20th century extensions, then only 30 years old, should be demolished and that only the*

original 18th century block would remain. The main entrance was moved to the east side where a small porch had been added.

PLANNING DETAIL: *The main entrance was moved from the internal court to the east elevation; the vestibule, lavatories and passages connecting the chapel and kitchens were transformed into a new kitchen and its allied offices, whilst the nursery and servants' quarters were moved to the second floor. The former entrance court was retained as a screen to the kitchen and new offices. The chapel and adjoining archway remained but all other buildings to the west were levelled to the ground except for the outer walls which were plastered and given a stone coping to form an enclosed Italian garden with statuary, lily ponds and loggia.*

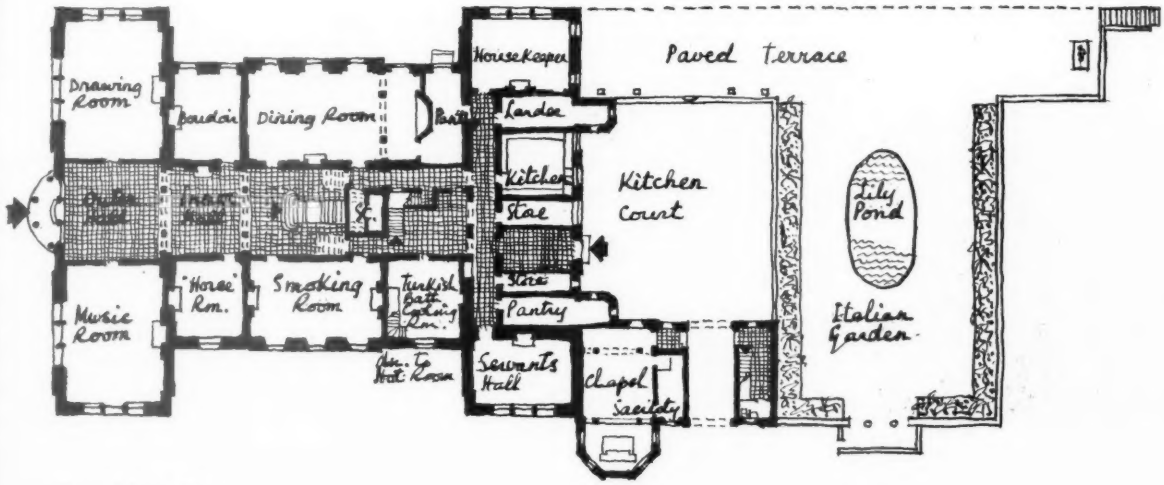
At the time of this partial demolition, building materials were in short supply. Thus, timber, windows, doors and sanitary fittings, all of good quality, were salvaged and used in the construction of a group of 12 cottages. Although expensive to sort, clean and stack, bricks were retrieved owing to the lack of new material. It is interesting to note that particular care was taken to make the best use of this quantity of salvaged stock by designing the new cottages so that proportions and general layout were in keeping with the character of this great collection of material. The spans and pitches of the Westmorland slated roofs, for instance, were repeated in the construction of the new cottages. Furthermore, there is little doubt that because of the high standard of craftsmanship and material used originally, this old work will last for many years.

COSTS: *For this work, no figures are available. By comparison, making good the main house was a comparatively small matter but the greatest expense was upon new plumbing and electrical installations, for walls were very thick, some as much as 4 feet. There is no doubt, however, that the owner's recurrent maintenance liabilities have been reduced very considerably and that he has now a house of less palatial proportions, which will simplify staffing problems. And the tenants in the new cottages, enjoy amenities which would cost much more than the total sum expended if built of new materials today.*

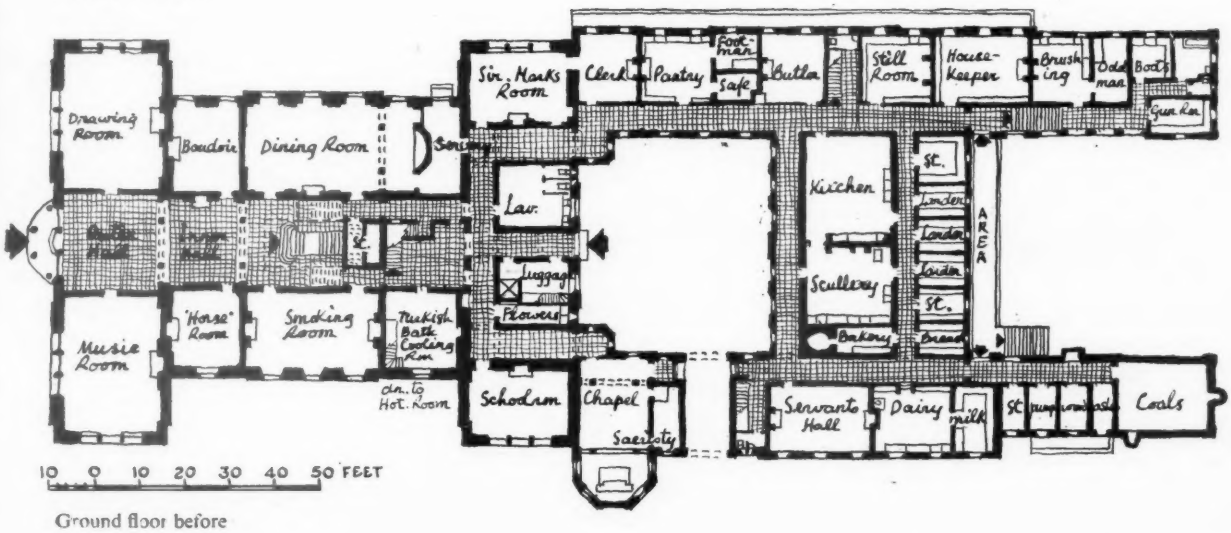




Top, looking across the internal court to the block containing the clerk's room and pantry, before demolition.
Above, the Italian Garden



Ground floor after



Ground floor before

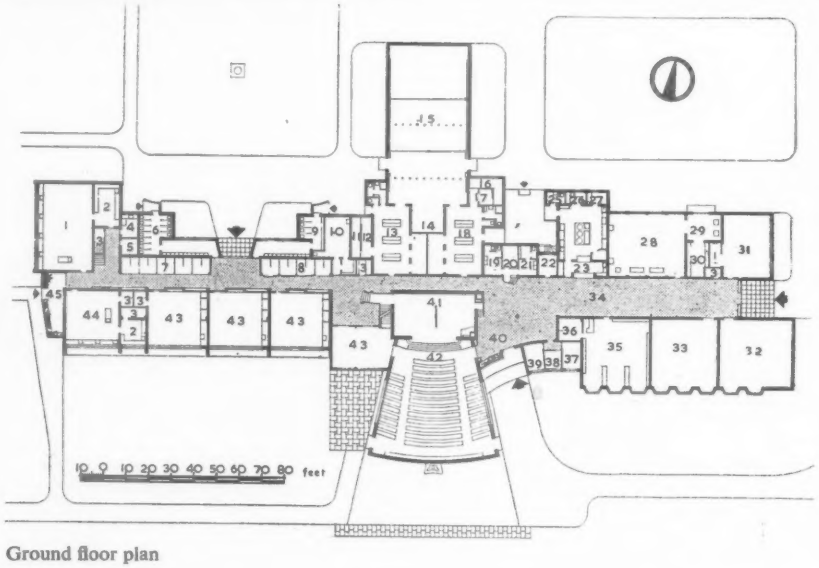
BASSINGBOURN VILLAGE COLLEGE, NEAR CAMBRIDGE

W. Wingate, the Cambridge County Architect, designed Bassingbourn Village College (right). In the day the building houses a secondary modern school (320 pupils). The school assembly hall is also he village cinema, theatre and dance hall. Other rooms have been designed and equipped so they may be used by young people and adults at week-ends and in the evenings. A wing which is reserved for adults during day and evening, houses a lecture room, games room and library. The village college at Bassingbourn is the first to be built in the country since the war, although four others, at Sawston, Linton, Bottisham and Impington were completed in the 1930's. The College is designed as the community centre for a group of 11 villages.





The photograph above shows the sculpture designed by Harold Dew, which stands against the south wall of the assembly hall. The cost of the site, building and equipment was £123,700.



Ground floor plan

KEY

1. Science laboratory
2. Preparation room
3. Store
4. Cleaner
5. Drying room
6. Girls' W.C.s
7. Girls' cloaks
8. Boys' cloaks
9. Boys' W.C.s
10. Medical
11. Boys' showers
12. Boys' drying area
13. Boys' changing room
14. Gymnasium store
15. Gymnasium
16. Girls' showers
17. Girls' drying area
18. Girls' changing room
19. Female W.C.s
20. Senior mistress
21. Male W.C.s
22. Meter room
23. Servery
24. Kitchen
25. Cloaks
26. Vegetable store
27. Larder
28. Workshop
29. Foundry
30. Timber store
31. Games room
32. Lecture room
33. Adult common room
34. Promenade
35. Library
36. Book store
37. Adult tutor
38. Office
39. Warden
40. Foyer
41. Stage
42. Assembly hall
43. Classrooms
44. Rural science
45. Wintergarden

DIARY

Seminar: Books and the Modern Movement V. Talk by Robert Furneaux Jordan on "Pioneers of the Modern Movement" by Nikolaus Pevsner. At the ICA, 17, Dover Street, W.1. 8.15 p.m. Members 2s. 6d., guests 3s. 6d. DECEMBER 9

Folk Art and Industrial Design in Poland. Illustrated talk by Ronald Horton. At the Polish Cultural Institute, 81, Portland Place, W.1. 7.45 p.m. DECEMBER 9

Geddes's Contribution to Town Planning. Talk by Sir George Pepler. At the Chemistry Theatre, University of London, Gower Street, W.C.1. 6 p.m. DECEMBER 9

Contemporary Furniture. Exhibition at the Geffrye Museum, Kingsland Road, E.2. Weekdays (except Mondays) 10 a.m.—5 p.m. Sundays 2 p.m.—5 p.m.

Library Group Meeting. D. Stratton-Davis will introduce an evening on J. B. Papworth. At the RIBA, 66, Portland Place, W.1. 6 p.m. DECEMBER 13

Lighting for Enjoyment. Illumination Design Course Lecture by T. O. Freeth. At the Lecture Theatre, ELMA Lighting Service Bureau, 2, Savoy Hill, W.C.2. 7 p.m. DECEMBER 13

The Seeing Eye. Talk by Sir Francis Meynell. At a luncheon meeting arranged by the DIA at the RS, Burlington House. Piccadilly, W.1. 12.30 p.m. DECEMBER 14

Maintenance of Lighting Installations. Talk by J. Mortimer Hawkins, W. Robinson and J. W. Strange. At an IES Sessional Meeting at the Lighting Service Bureau, 2, Savoy Hill, W.C.2. 6 p.m. DECEMBER 14

Improvements and Conversions. Exhibit by the MOHLG. At the RIBA, 66, Portland Place, W.1. Mondays to Fridays 10 a.m.—7 p.m. Saturdays 10 a.m.—5 p.m. DECEMBER 9 TO 22

TECHNICAL SECTION

The object of the MOW Working Party on Retention Moneys, which has just published its Report,* was to see whether the present system of retentions should be replaced by bonds or guarantees. For some time contractors and sub-contractors have been claiming that the present system locks up too great a proportion of their working capital. Three possible alternative methods have been put up for giving the building owner security for the making good of defects: (1) the " performance bond," (2) the " maintenance guarantee bond " and (3) the " trade association bond." If method (1) is used the contractor enters into a bond with a bank or an insurance company at the beginning of a contract. If method (2) is used he enters into a bond at the beginning of the maintenance liability period. In each case the bank or insurance company stands surety for completion. If method (3)—the " trade association bond "—is used (and this comes from the specialist sub-contracting field) surety is provided by a trade association. The Working Party Report is against all three systems, when they are applied to the main building contract, chiefly because they all imply that the actual certifying of defects would have to be done by a third party and not by the employer's professional adviser. The Working Party agrees that too much of the contractors' capital is tied up in retention moneys, but points out that this is due as much to delays in payment as to the actual proportion of money retained. Thus, though the Working Party calls for a reduction of retentions to a minimum, it leaves no doubt that the real answer is to revise our slipshod methods of handling contracts, with their incomplete drawings, approximate quantities and extensive re-measurement.

* " Retention of moneys on Building and Civil Engineering Contracts." HMSO. 6d.

This week's special article

10 DESIGN: BUILDING TYPES
résumé of conference on hospital planning

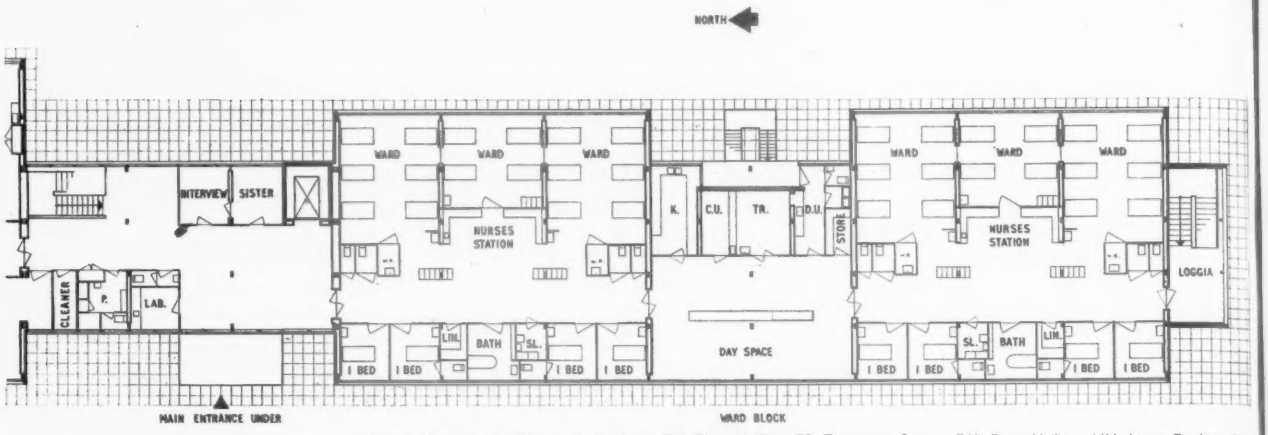
The number preceding the week's special article or survey indicates the appropriate subject heading of the Information Centre to which the article or survey belongs. The complete list of these headings is printed from time-to-time. To each survey is appended a list of recently-published and relevant Information Centre items. Further and earlier information can be found by referring to the index published free each year.

A two-day conference was held on October 21 and 22 at the RIBA, at the instigation of the RIBA Hospital Committee. The papers were read by Llewelyn Davies, Director of the Division for Architectural Studies at the Nuffield Foundation, M. E. Molander, Director of the Central Hospital Planning Bureau of Sweden, Miss Theodora Turner, Education Officer, Birmingham Centre of Nursing Education and Dr. J. O. F. Davies, Senior Administrative Medical Officer of the Oxford Regional Hospital Board. All these have been published in full in the RIBA JOURNAL, *but the Editors consider that readers will appreciate a précis of these papers, written by someone familiar with the problems discussed. They have therefore asked John Weeks, of the Nuffield foundation, to summarise the papers that were read, and the discussions which followed them.*

The conference was opened by the Minister of Health, who announced that in the near future the Ministry was to issue bulletins on various aspects of health buildings. These would not be books of type plans, but would lay down space standards and general points on the planning of departments, and they would include reviews of good current practice both in Britain and abroad. Hospital planning problems are now very complex, and he hoped that these bulletins would enable architects to be kept appraised of current developments in hospital design.

GENERAL DESIGN PROBLEMS

Llewelyn Davies, speaking on the general design problems of the hospital, began by



KEY : P. Porters ; SL. Sluice ; K. Kitchen ; CU. Clean Utility ; TR. Treatment Room ; DU. Dirty Utility ; LIN. Linen Cupboard

Fig. 1. Experimental ward block at Musgrave Park Hospital, Belfast (Architect: R. Llewelyn Davies).

describing the work of the Nuffield Division for Architectural Studies, illustrating some of the work on the design of wards done by the Investigation into the Functions and Design of Hospitals, the Division's forerunner. He showed briefly the development of the ward from the single barrack-like room where "discipline" and "ventilation" were the watch words, to the modern ward where the patient's eye view and comfort were very important. He also gave some details of the findings of the team in its studies in outpatient departments. He went on to draw a parallel between hospital and town planning: there were as many clients and as many different departments in a large general hospital as there were use-zones in a small town. These departments could however be grouped broadly into wards on the one hand and all other departments on the other. This grouping was reflected in the "matchbox and muffin" plan, which consisted of a multi-storey block of wards—the "matchbox" up-ended on a one or two-storey spreading "muffin" in which were accommodated outpatient, casualty and specialist departments, serving both in- and outpatients, in a form which—most important—allows them to expand easily. The new hospital at St. Lô by Paul Nelson was one example of this, as also was that at Swindon by Powell & Moya. (Fig. 2.)

Mr. Llewelyn Davies emphasized that it was no part of the Division's work to produce type plans, but that the aim must be to "free the imagination of the architect through deeper knowledge of his problems." A report on the Nuffield Investigation's work is to be published at the beginning of 1955.

One of the first problems which has to be faced when designing a health building is that of size. The Investigation had undertaken a special study of the means whereby demand for hospital care, both in- and outpatient, from a population could be measured. A quantitative basis, the figures being modified locally, could be established for design, and the architect would not "continue to plan by guess-work, opinion and probability, an unhappy triumvirate." [Vines, H. W. C., (1952) Background to Hospital Planning. London.]

WARD PLANNING

There had been a steadily growing realization of the importance of cutting down the distance which nurses had to walk in going about their duties. Current planning is based on a ward size of 25 to 30 beds, but a new approach to nursing organization is being tried out here and there under which a group of beds forming a nursing unit is made the responsibility of a nursing team, several such units being grouped together under a sister. The Investigation's experimental ward buildings have been designed with this form of nursing in mind. Fig. 1 is a plan of the Northern Ireland ward based on a nursing unit of 20 beds. Four of these 20 bed units can be grouped on one floor giving a total of 80 beds, 40 on either side of a block containing lifts, and sisters', doctors' and nurses' rooms. This unit is no greater in length than would be a block containing a pair of "traditional" wards housing perhaps 56 beds. The extra accommodation has been obtained partly by compact planning and partly by increasing the thickness of the building. Mr. Llewelyn Davies considered that the considerable expense of flexible partitioning both in materials and because of the need to increase the service points, could only be justified if there was reasonable certainty of substantial changes in the plan being made at frequent intervals. He did not think that this was the case in wards. To ensure that beds are as far as possible interchangeable between different departments, the ward block should be sited so that all wards have equal access to specialist facilities, such as X-ray and theatre. There is probably no reason why the same ward plan should not be used for most departments in an acute general hospital.

OUTPATIENTS AND OPERATING THEATRES

Today the treatment and diagnosis of outpatients is a major part of the hospital's function and the design and placing of the outpatient department which is one of the most rapidly expanding, is very critical.

On the whole, in recent years, the proportion of operating theatres to beds has tended to increase. They are now usually grouped together, as paired theatres are cheaper to provide than single theatres because they are able to share much of the very expensive ancillary accommodation and services. Once the provision is accepted of recovery accommodation within the theatre suite, where patients may be kept under the eye of the anaesthetist during the immediate post-operative period, then the need for the theatre to be immediately adjacent to the ward becomes less.

Mr. Llewelyn Davies emphasized in his paper that while research such as that on which he had been engaged can contribute general ideas and methods of approach, every hospital is an individual problem in design. The programme should not be thought of as something prepared by the hospital authority and then handed over to the architect to design from. The architect has a contribution to make at the programme stage and co-operation between him and his hospital colleagues should be continuous at all stages.

In discussion, Sir Arthur Stevenson, RIBA Gold Medallist and architect of the Melbourne Royal and many other Australian hospitals, said that thoroughly competent hospital management would enable costs of running to be reduced to a minimum. He said also that the running economies are very dependent on good equipment and that the quality of this is of more importance in the long run than its first cost.

Mr. Guy Aldis, Chief Architect to the East Anglian Regional Hospital Board, said that it was impossible to lay down standards at any point in a hospital. Flexibility was most important and to gain this, small points, such as constant ceiling height throughout the buildings, could be of great significance.

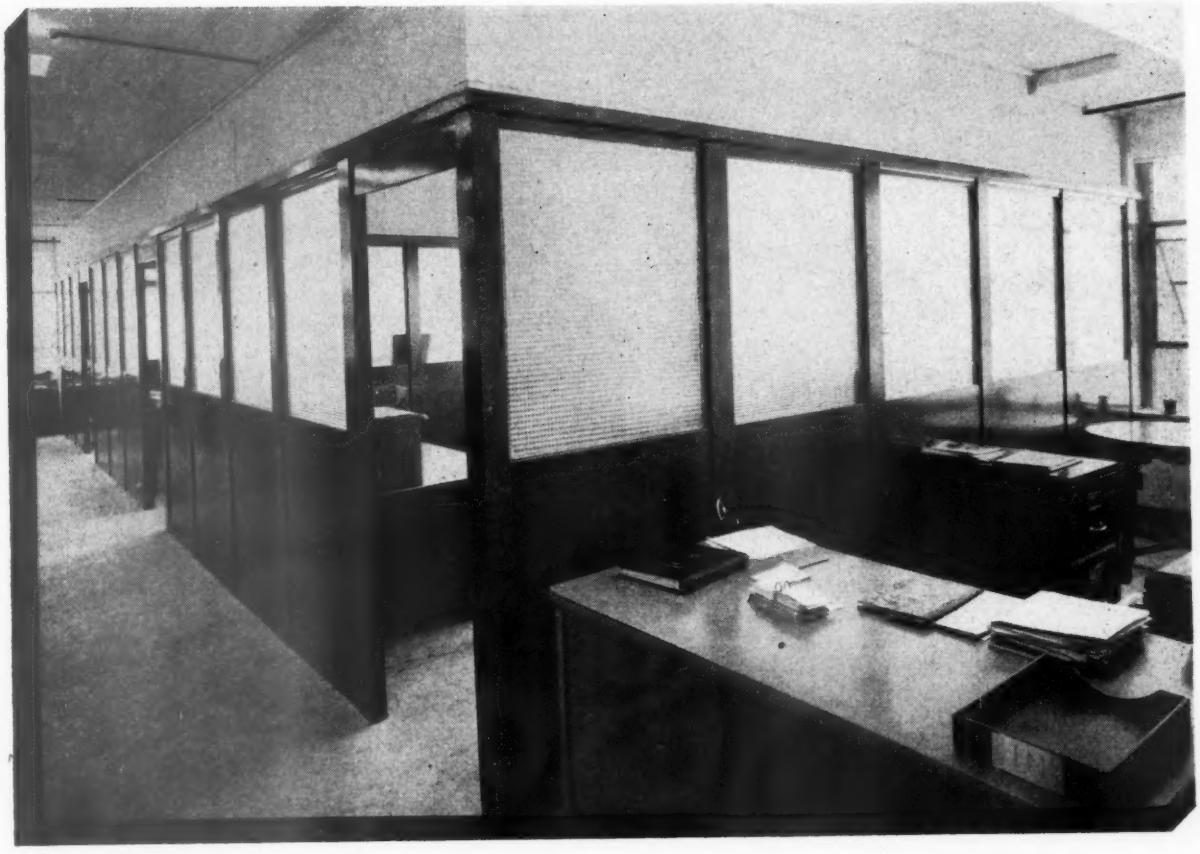
THE SIZE OF HOSPITALS

M. E. Molander, introducing his paper on the same subject, showed a number of slides illustrating the hospital and its environment. He said that the aesthetic aspects of hospital design were often forgotten in the desire to build for the greatest efficiency and economy. One of his slides showed a multi-storey hospital completely dwarfing a small town and another slide showed a low hospital buried in trees; he emphasized that the urban solution must be considered quite separately from the rural solution. He added that the trouble was that architects secretly liked huge buildings. In his paper Mr. Molander said that in Sweden uniform hospital statistics have enabled architects and administrators to follow trends and developments in a demand for beds in a satisfactory way. A State Committee on hospitals had done a certain amount of work on the optimum sizes of hospitals taking all factors into account and particularly the economics of staffing. They now considered that a hospital to a size of from 400 to 500 beds is the cheapest to run and the most efficient from the medical point of view. He also noted that many departments, for instance, X-ray and laboratories, are growing very rapidly, but that the wards form a fairly stable element in a hospital. As there are technical and economic advantages in concentrating them, one is provided with conditions for a natural architectural variation and articulation. Diagnosis and treatment blocks have a greater need for flexibility but, like Mr. Llewelyn Davies, he did not think that it paid to go to extremes to obtain this.

In order to attain the greatest possible flexibility and capacity as regards occupancy, ward units should be designed to make possible the admittance of both male and female

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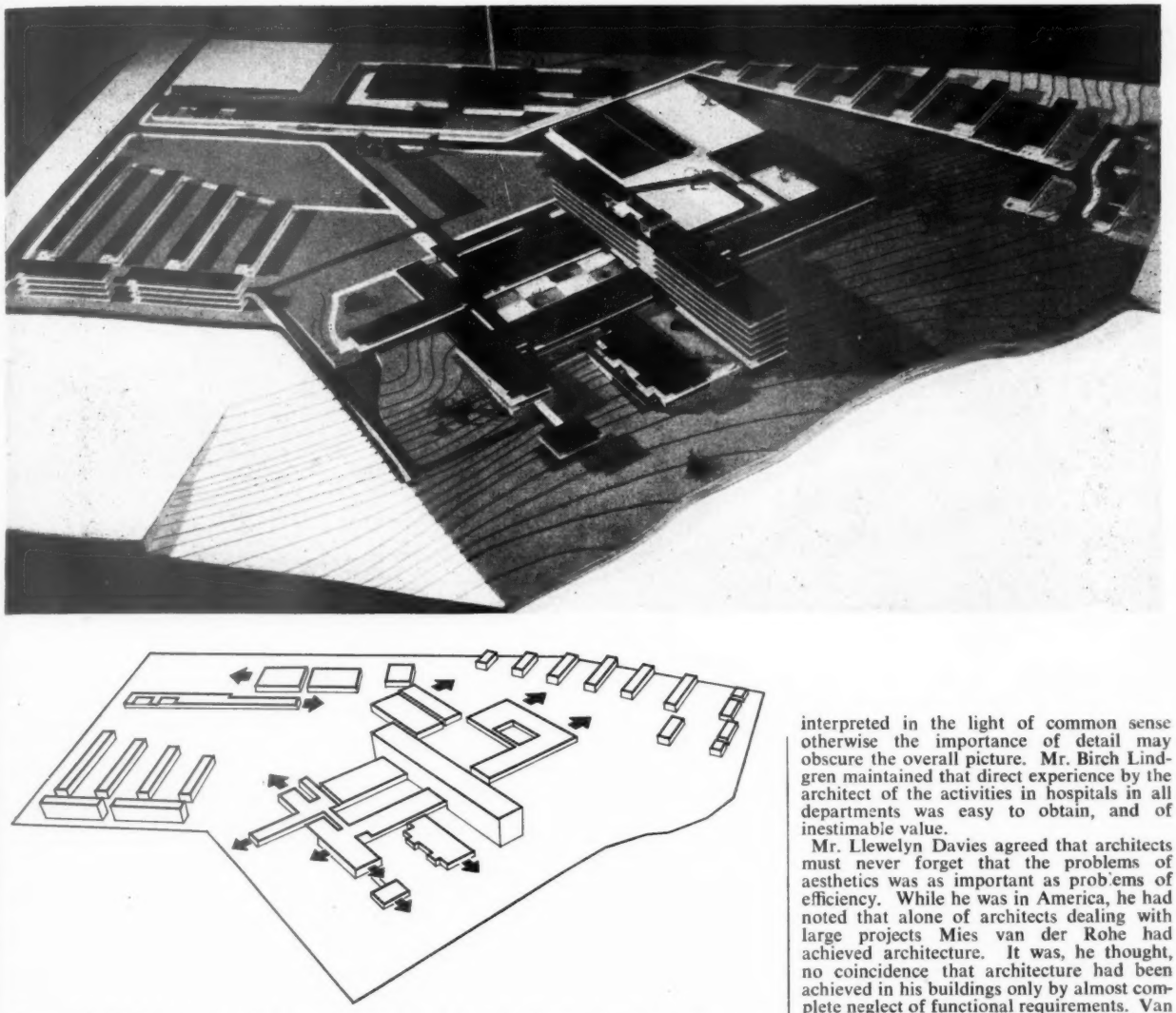


Fig. 2. Model of a projected 500 bed General Hospital for Swindon (Architects: Powell and Moya. Consultant Architect: R. Llewelyn Davies). Arrows on key plan show direction of future extensions.

patients. In Sweden it was usual to have separate rooms and not open wards, and 6-bedded rooms have been considered the maximum. A close parallel has been found in the need for isolation rooms in medical wards, with the research carried on by the Nuffield Investigation into the functions and design of hospitals. [Bailey, N. T. J. On Assessing the Efficiency of Single-Room Provision in Hospital Wards. (1951) *J. Hyg. Camb. 49*, 452.]

In the operating department two rooms can be regarded as the minimum requirement for a surgical department as one of them must always be ready to receive acute and emergency cases. It has now been accepted that central operating departments are preferable to dispersed theatres.

For ordinary general hospitals in country areas the number of X-ray examinations will be about 50 per bed per year, with an additional 40 per cent arising from the outpatient department.

KITCHENS AND LAUNDRIES

In Sweden the central hospital kitchens are generally situated in a separate building together with the staff restaurant. The study of the temperature of the food on its way from the kitchen to the patients' building has made it clear that a far greater drop occurs in the kitchen between the stove and the trolley and later, while it is being distributed round the wards than "en route" between the kitchen and the ward, provided that properly insulated trolleys are used.

It is now evident that considerable savings can be made by centralizing the laundries for a group of hospitals. The cost of transport about the hospital is now so great that correct planning of departments in relation to each other is of the utmost importance. In Sweden it has been shown that 60 per cent. of all hospital errands originate from or terminate at the operating theatres, X-ray department and pathology. These departments form a centre around which other departments are grouped.

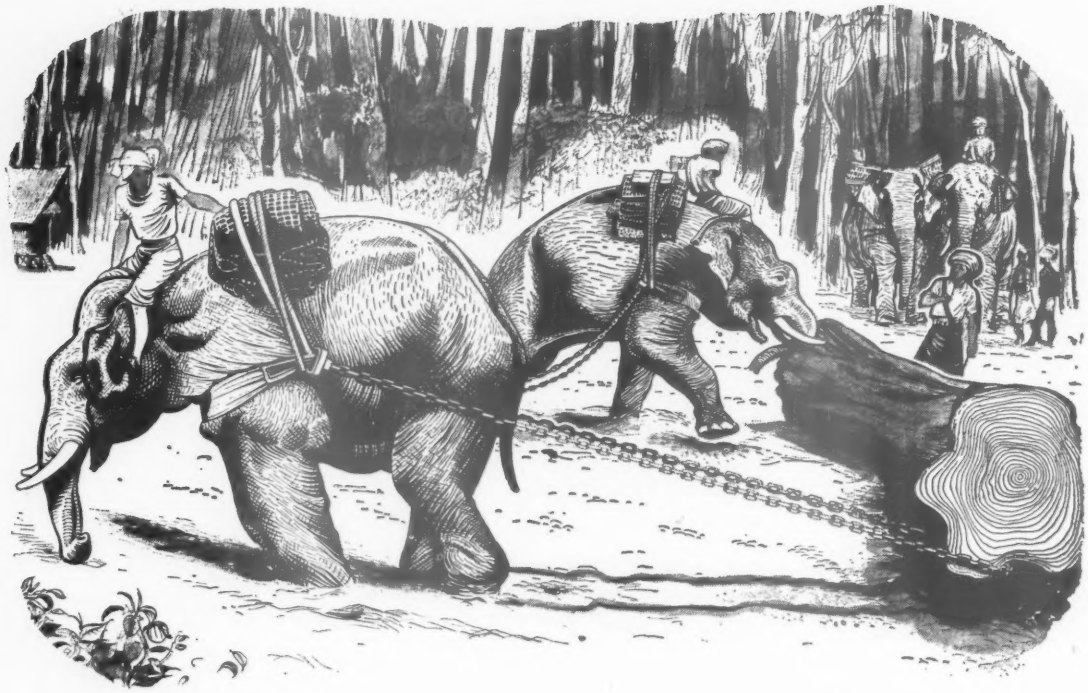
Mr. Birch Lindgren of Sweden, following Mr. Molander said that hospital planning was full of contradictions. It was very important that the atmosphere of a hospital was friendly in order that the patient might be kept in a calm state of mind; however, as Mr. Molander had pointed out, small rooms and small hospitals are all extravagant in running costs and very often lead to difficulties in running. Research must always be interpreted in the light of common sense otherwise the importance of detail may obscure the overall picture. Mr. Birch Lindgren maintained that direct experience by the architect of the activities in hospitals in all departments was easy to obtain, and of inestimable value.

Mr. Llewelyn Davies agreed that architects must never forget that the problems of aesthetics was as important as problems of efficiency. While he was in America, he had noted that alone of architects dealing with large projects Mies van der Rohe had achieved architecture. It was, he thought, no coincidence that architecture had been achieved in his buildings only by almost complete neglect of functional requirements. Van der Rohe provided large areas of undifferentiated space and it was left to the client to fill it in as was most suitable to him. This was clearly not the best solution in the long run. The only way architects could cope with problems as complex as those of the hospital was by knowing so much about the problem that their imagination could ride freely over the whole field of design.

Miss Theodora Turner introduced her nursing point of view next. She emphasized that a patient who was content made the nurse's life easier and the architect should always plan with that as a first ideal. She welcomed the smaller hospital for that reason. She criticised the Nuffield experimental ward plans because they would need fewer sisters but a greater number of trained staff nurses. Mr. Llewelyn Davies said later that experiments already carried out by the Ministry of Health used, in every case, the same staff as had been used before the experiments were begun.

WARD SIZE

With regard to the size of the nursing unit, Miss Turner thought that the ideal number of acutely ill patients that one sister should have in her charge was 20 but that in present circumstances it was more realistic to plan for a unit of 24 to 30 beds. Many nurses still had to walk 192 ft. every time someone wanted a glass of water. This underlined the importance of locating annexes and offices in a central position, but



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care should be taken to see that they did not form a noisy centre to the ward.

OUTPATIENTS

Miss Turner condemned the provision of outpatients clinics in close association with the wards. "It may be pleasant for the doctor to be able to pass from inpatients to outpatients without having to walk the length of the hospital but . . . the arrangement is costly in both nursing and lay staff." She said that it is better to keep the outpatients' entrance quite separate from that for inpatients because the reception arrangements needed were so different.

She felt that the advantages of recovery rooms in theatre suites were considerable and that they should certainly be considered where new theatres were to be built: she agreed with the other speakers that grouped theatres were better than scattered theatres.

THE DOCTOR'S POINT OF VIEW

Dr. J. O. F. Davies, introducing his paper, welcomed the move towards smaller hospitals and he underlined the value of small self-contained bed groups in the ward, which made for a friendly atmosphere and increased the flexibility of the ward unit as to sex and specialty. Such small units would largely do away with the necessity for expensive movable partitions.

In pediatric nursing he subscribed to the late Professor Spence's view that the mother should be regarded as the nurse's right hand and should, whenever possible, remain in hospital with her child.

In the outpatient department, surgery was increasing very greatly in importance as also was the use of the pathology laboratory and the radiology department.

Dr. Davies wondered whether it was possible to give a comfortable, kindly feeling to hospitals with wards stacked vertically. On the other hand, in spite of the aesthetic and "atmospheric" advantages, the tendency for single storey hospitals to spread would have to be watched. Dr. Davies said that from the purely medical viewpoint there are very few conditions for which sunshine is specifically needed and the question of the aspect of wards was not of paramount importance.

Dr. Davies condemned the use of large nurseries in maternity wards for the housing of babies at night. There is, of course, here a conflict of interests between the child specialist and the maternity specialist. Dr. Davies, while recognizing the maternity specialist's viewpoint, held that babies should be kept with their mothers, the benefit to the child being incalculable.

He agreed with all the other speakers that X-ray and pathology facilities should go with the outpatient department and be designed for easy expansion, and that the casualty department should be close by. Dr. Davies thought that there was much to be said for a uniform pattern of consulting room suite. Tailor-made suites are probably now an extravagance which we can ill afford.

Dr. Davies thought that with the development of anaesthetic techniques and particularly those where the patient's blood pressure is reduced to low levels, the recovery ward in the theatre suite, with specialist staff, is becoming essential.

INFLUENCE OF NURSING RECRUITMENT

Dr. Davies concluded by pointing out that whatever the medical changes or advances in hospital medicine, the future will be influenced by the ability to recruit nurses. We may have to design all wards as small highly equipped units, with dormitories and cafeteria facilities attached. Patients would then be moved from the wards where they would stay for their acute period, to the ambulant wing, domestic in character, as soon as possible, and be looked after by relatively few unskilled personnel under the general control of a ward sister.

Dr. Davies reminded his audience of the enormous amount of work there was to be done in the field of mental health building, and hoped that these problems would be discussed at a future meeting.

INFORMATION CENTRE

8.40 surveying and specification
ESTIMATING

Spon's Architects' and Builders' Price Book. Edited by Davis, Belfield & Everest. (E. & F. N. Spon Ltd. 80th Edition. 1954-55. 25s.)

Though this classic handbook is dedicated to architects and to builders alike, it is probable that architects are not so familiar with it as builders. Like all good reference books it does not change format and content more than is necessary. It is traditionally divided into three parts: the first and by far the longest being devoted to estimating, the second to approximate estimating and the third to daywork and fees. To this must be added the invaluable "Buyers Guide" which lists manufactured products under their trade names and gives the addresses of the manufacturers.

Though familiarity with the Price Book and its workings can only be a sign of grace in the architect, it is perhaps worth repeating the editor's warning that published prices are not at all the same as a tender. Another warning is that the prices per foot cube for different types of building quoted in the approximate estimating section are based on the last available figures and—in the case of some building types—are based on pre-war information "plus an allowance for increased costs and an adjustment for changed standards of building" and must therefore be treated with caution.

10.114 design: building types
SECONDARY SCHOOLS

New Secondary Schools: Supplement. (Building Bulletin 2A MOE HMSO Aug., 1954. 3s. 6d.).

This Bulletin runs to 100 pages and even so is not comprehensive as it is supplementary to Bulletin No. 2, while on some matters reference is also needed to Ministry of Education circulars. It takes into account the reduced minimum areas of teaching accommodation for one or two form entry schools laid down in the 1954 Regulations. There is also an entirely new section dealing with the building of secondary schools by instalments.

Obviously, all architects concerned with the design of secondary schools must study this new bulletin in detail. It is clear that education authorities must brief their architects fully, for there are numerous alternative ways in which the minimum accommodation can be allocated and decision in principle must be taken by the education authority as much depends upon the availability of children to fill the teaching spaces completely, both when the school is in full working order and in any interim period. Some arrangements mean modifications to the normal recommendations to certain parts of the school. It is also important to get quite clear the basis of cost allowance per place, and the formula for this is now changed from that given in Circulars 209 and 215. It will be found that the number of places for calculating cost allowance is not in fact the same as the number of children in the school, but tables at the end of the bulletin clarify the rather confusing text on this and other questions of cost.

The bulletin contains sections dealing with modern, grammar, technical, bilateral, multilateral and comprehensive secondary schools. In each section, except that on comprehensive schools, there are useful notes on planning of certain parts and there are example schedules of possible ways of allocating the total teaching area. These are the tables which the educationist must study if anything like a clear brief is to be given to the architect, but the architect must also study them in some detail in order to know what everyone is talking about.

There is a fairly lengthy discussion on the problems of planning for building by instalments and some useful sketch illustrations of possible plan arrangements.

Again the Ministry of Education have done a very good job, but, unlike some of the earlier bulletins which dealt more particularly with plan arrangement and where most of the information could be conveyed by attractive sketches, this one is much harder to follow and needs very careful reading, but it is nevertheless, essential that an architect should master it if he is designing a secondary school.

17.104 construction: general
PUBLICATIONS, HMSO

List of Government Publications on Building (HMSO free. Dated Dec., 1953, but published Oct., 1954).

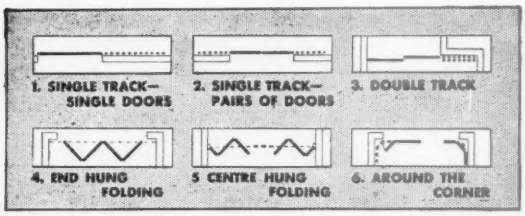
Take a look at this—you will be surprised at the things you have missed. You might also quite reasonably be surprised to find December, 1953, as the date on the cover when it has only become available in October, 1954. Is this the way we are "kept abreast of latest developments" and how the time "between laboratory and site" is reduced?

19.181 construction: details
CONCRETE SHELL ROOF

Saddle roof, 2½ in. thick, spans 233 ft. (Engineering News-Record [USA]. May 20, 1954. pp. 64-66.)

Hyperbolic paraboloid roof of exhibition hall, Karlsruhe, Germany, spans 233 ft. longitudinally and 151 ft. transversely. Interesting to both architects and engineers.

In the JOURNAL for September 3, 1953, p. 301, we featured an unusual structure provided in America as an exhibition hall. The basic principle was a series of suspension wires spanning catenary fashion in the longest direction of an oval on which was laid a waterproof roofing membrane and this was held down by a series of tensioned wires spanning at right angles thereby producing a saddle-shaped roof. The roof illustrated behaves in a similar manner but the membrane used consists of 2½ in. thick concrete. It may be described as a catenary in the long direction and an arch in the short direction. Height of the roof in



PRECISION ENGINEERED *to the last detail. Note the bearing lubrication nipples in this* KINGWAY *door hanger; the flat wheel treads which spread the load at the wearing surface; the ease of vertical and lateral adjustment.*



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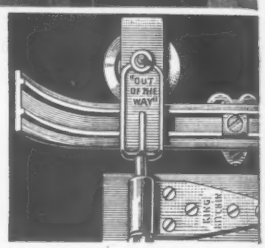
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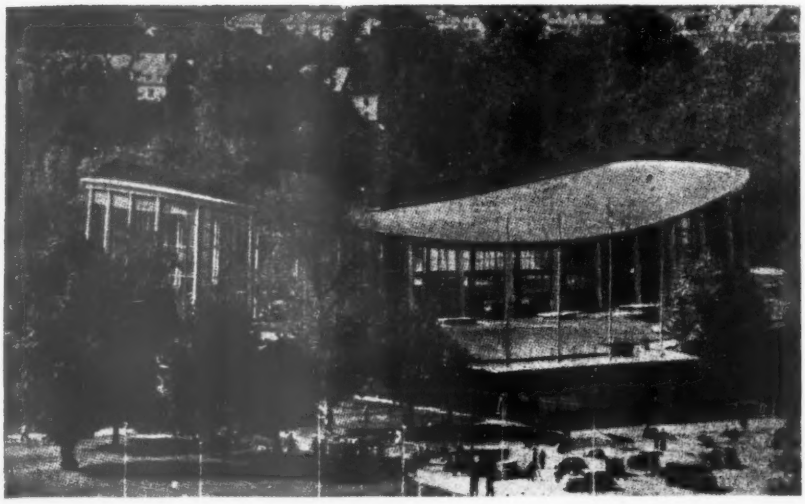


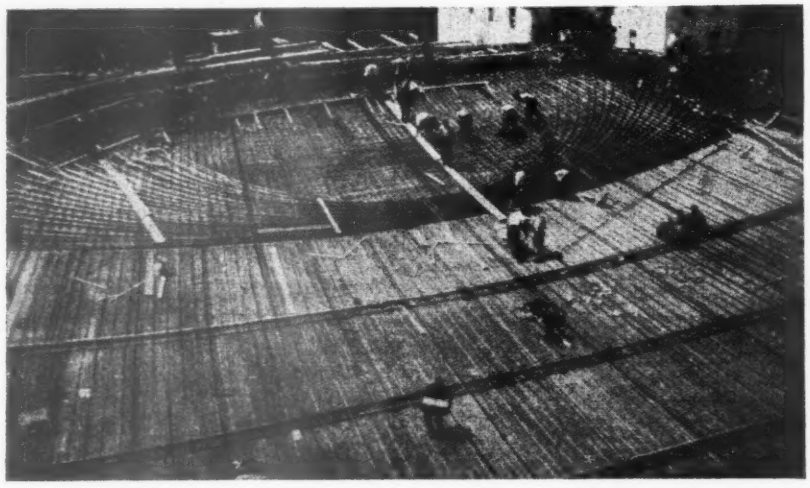
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Hyperbolic paraboloid concrete shell roof at Karlsruhe. See note No. 19.181.

the centre of the hall is 43 ft., at the ends 57 ft. 8 in. and at the sides 39 ft. 4 in. A heavy ring beam is provided at the edge of the shell and is subjected to a pull inwards from the catenary and a thrust outwards from the arch. The tensile stresses in the roof are carried by prestressed bars and these are increased in size and number at the narrow ends of the roof where there is a concentration of tensile force.

23.201 heating and ventilation

AMERICAN PRACTICE

Current American Practice in Heating, Ventilating, and Air Conditioning. (Paper by J. K. M. Pryke. September meeting of the Institution of Heating and Ventilating Engineers (to be published in the I.H.V.E. Journal).

The author describes developments in American practice in the post-war years.

In domestic heating there has been a move away from the use of warm air systems which are now used mostly in the smallest and cheapest private houses. This change dates back to the introduction of pumped hot water systems serving floor panels in the basement-less houses built between 1945 and 1947. This form of heating was extremely popular and was subsequently adopted for use in some larger buildings. It is now recognised, however, that in some buildings, particularly those of lightweight construction, the slow response of the heavy floor slab may cause control difficulties, and ceiling heating may give a better solution. Such installations are particularly convenient in American private houses (which generally have false ceilings) and they are tending to replace heated floors. Pumped hot water systems are also used with finned convectors which have practically replaced the conventional cast iron sectional radiator. Baseboard heating too is coming into increasing use: here again the heating elements are mainly convective. In housing generally, pumped hot water systems serving panels or convectors are used about equally with warm air systems.

In multi-storey buildings convectors are most popular; for these hot water has tended to replace steam as the heating medium. Ceiling panels are also becoming more popular for this type of building.

In factories and in other buildings (such as auditoria), where a single large space has to be heated, warm air systems are usually chosen. There are a few single storey factories where floor heating has been installed. The high pressure hot water systems, which have been increasingly used in this country, have not been adopted to any extent in America.

The author also discusses in detail the American basis for design of air conditioning systems.

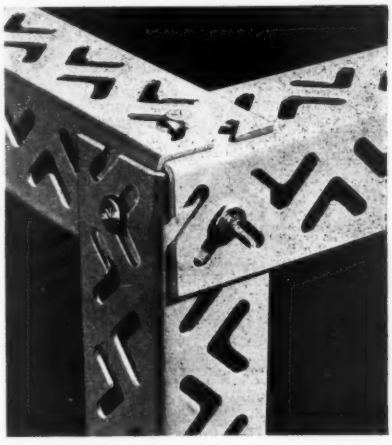
THE INDUSTRY

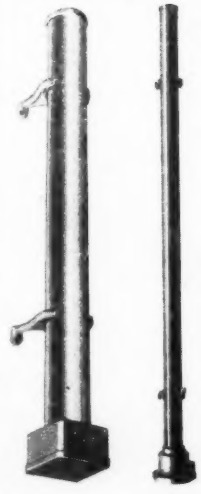
From the Industry this week, Brian Grant reports on (among other things) some tubular heaters, a system of slotted angles and a new roof ventilator.

TUBULAR HEATERS

Two new types of electric tubular heater have been produced by E. K. Cole. The first is the flameproof Buxton-tested type FP, which is suitable for use where Group II inflammable gases are present—in cellulose paint shops, petrol and oil stores, grain warehouses, etc. The heaters have been approved, and comply with B.S. 229. Loading depends upon the required use, and a range between 30 and 60 watts per foot is available. Price is £4 plus 8s. per foot length.

The horticultural pattern, type H, is intended for greenhouses, or garden frames, but can also be used industrially in drying or other processing plants. The design of these tubes is similar to the standard range except that the tube itself is of aluminium, with a die cast terminal chamber, and it is rustproof and watertight. Standard loading is 60 watts per foot: other loadings to special order. Price is 12s. plus 5s. per foot, and *both* types of heater are free of





Above, the Chevron slotted angle. Extreme left, two foot Horticultural Thermotube. Left, four foot flameproof Thermotube.

Planning a Large Scale Tea Service?





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SLOTTED ANGLE

There are already on the market several types of slotted angle with which can be made various types of shelving and storage racks, benches and other light structures. One of the latest designs is Chevron, in which the angles, 3 by 2 or 2 by 2 in., are slotted with a double chevron pattern so spaced that there are no blind spots where a bolt cannot be inserted, so that no design allowance has to be made for the position of the slots. This is of particular advantage when using diagonal braces at acute angles or when it is desired to build gravity roller conveyors with a uniform slope. For joining the various sections ordinary bolts can be used, but special bolts are produced having a projection under the head which engages in the slot so that the nut can be tightened with only one spanner. For comparatively heavy work the angles may be bolted together in various ways to form tees, channels, I sections or boxes. The angle is produced in 8, 9 and 10 ft. lengths, and is made of 14 gauge steel stove enamelled grey. Shelves are also made in various sizes with chevron slots at each corner so that they may be fixed to the uprights at any desired height. (*Chevron Structural Units Ltd.*)

NEW FINISHES FOR PLASTICS

Several new patterns have been added to the range of Warerite laminated panels. There is one intended for kitchens which has a tablecloth-like check pattern in pink, blue or green stripes on a white background, or there is the same thing in stripes only. A further new pattern gives the effect of rain spots on a plain background in red, light or dark blue, green and light or dark grey. The pattern is really quite pleasant, though at first glance it is almost too lifelike, so that on an outdoor table one migh be forgiven for thinking at first glance that something had really gone wrong with the finish. (*Warerite Ltd., Ware, Herts.*)

KITCHEN EQUIPMENT

C.S.A. Industries have issued a new booklet on English Rose kitchen equipment which contains information about several new units, including one-piece stainless steel work tops, a Vent-Axia ventilating unit, a 3-cu. ft. refrigerator and a Revo-made cooker (type ER 94) which has the oven mounted at waist level with the griller and controls above it, and the usual boiling rings at the side. The rest of the range includes all normal kitchen appliances, cupboards, sinks, cabinets, cookers and boilers, all in uniform styling and colours, and to unit dimensions. (*C.S.A. Industries Ltd., Warwick.*)

ROOF VENTILATORS

The drawing on the right shows the Lextra roof ventilator, which is produced in a range of six sizes with air displacements varying from 950 (80 watts) to 14,500 cu. ft. an hour (950 watts). The ventilator bodies are made of sheet steel finished in bitumastic paint, or from galvanized steel. Fan units have motors conforming to BSS 168 and 170. (*The Standard & Pochin Bros. Ltd., Evington Valley Road, Leicester.*)

DRAWING INSTRUMENTS

Readers who occasionally desert their A.J. for an evening of TV may have seen an Inventor's Club show of the Anderson ruling pen, which has a transparent large capacity ink reservoir in the handle. The standard type has blades which cover a range of thickness varying from a fine hair line to $\frac{3}{32}$ in., but a selection of nibs specially designed for lettering and free hand work is also available. The reservoir maintains a steady flow of ink so that the line has a constant density, and this is a particular advantage when using coloured inks. It seems that there has been a considerable demand for this pen, and quantity production is about to start. The photograph gives a general idea of the pen, though the draughtsman's grip seems a bit peculiar. (*Vetry Ltd., Manor Way, Boreham Wood, Herts.*)

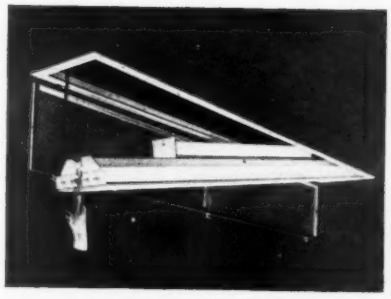
LIGHTING FITTINGS

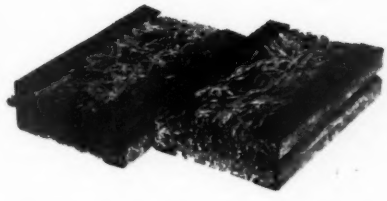
Ediswan have just produced a recessed ceiling fitting which is simple to install and in which the lamps and starter gear are easily accessible for replacement. The fitting consists of an industrial trough reflector to take one or two fluorescent lamps and fitted inside a steel frame which surrounds the ceiling aperture. The version illustrated has a dustproof glass cover, but alternative facings can be supplied with louvres. At one end of the fitting is a retractable lug, operated by a key, which allows the whole reflector assembly to be lowered for access to the control gear. In its lowered position the reflector remains vertical, hanging from lugs at the other end, but it can be detached by a simple lift and twist movement, and taken down completely for cleaning or maintenance. (*The Ediswan Electric Co. Ltd., 155 Charing Cross Road, London, W.C.2.*)

WOOD WOOL PANELS

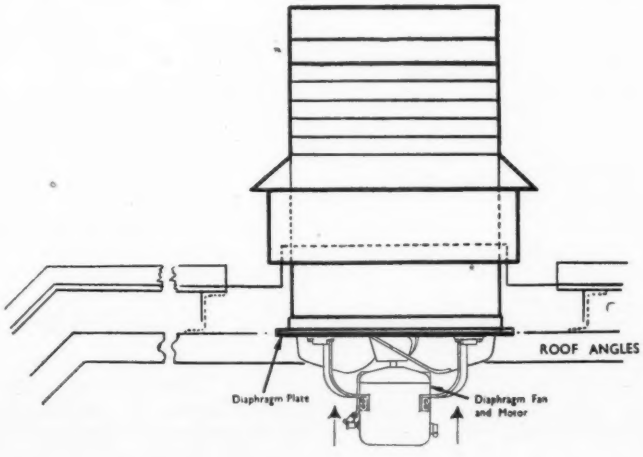
Wood wool panels have been manufactured in this country for nearly 20 years and are widely accepted as an insulating medium which also has considerable structural strength, so that it can be used for partitioning, for permanent shuttering, suspended ceilings or for roof covering. Halcrete Panels Ltd., who make the plain slabs in all the standard sizes and thicknesses, have also evolved a steel reinforced panel, having steel channels on each long side, so shaped that when the slabs are laid side by side the channels interlock and form a tongued and grooved joint. The panels are 2, 3 or 4 in. thick, according to the degree of insulation or length of span required, and will take superimposed loads of 30 lb. per sq. ft. over spans up to 10 ft. The interlock prevents individual panel deflections and the cracking of ceiling plaster at joints and at the same time provides a finished decking on which roofing felt may be laid. (*Halcrete Panels Ltd., Stockley, West Drayton, Middlesex.*)







Above, top to bottom, the Anderson ruling pen with ink reservoir; Ediswan recessed fluorescent fitting which may be lowered for maintenance; Halcrete channel reinforced woodwool slabs with interlocking edges. Below, Lextra power roof ventilator.



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9.12 54

Buildings Illustrated

Offices at Renold House, Wythenshawe, Manchester, for Renold Chains Ltd. (Pages 702-705). Architects: Cruickshank & Seward, F.R.I.B.A.; General Contractors: J. Gerrard & Sons Ltd. Clerk of Works: T. S. Parkinson. General Foreman: A. E. Lee. Sub-contractors: asphalt, Limmer & Trinidad Lake Asphalt Co. Ltd.; reinforced concrete, fireproof construction, The Trussed Concrete Steel Co. Ltd.; bricks, G. Tucker & Son Ltd.; artificial stone (pavings), Empire Stone Co. Ltd.; artificial stone, Girlingstone Ltd.; partitions, Holoplast Ltd.; glass, Pilkington Bros. Ltd.; glass block walling, J. & A. King Ltd.; cork tile flooring, Cork Insulation & Asbestos Co. Ltd.; thermo plastic tiles, Limmer & Trinidad Lake Asphalt Co. Ltd.; central heating and cloakroom fittings, Dodd Engineering Co. Ltd.; electric wiring, W. J. Furst & Co. Ltd.; electric light fixtures, The Merchant Adventurers of London Ltd.; sanitary fittings, Shanks & Co. Ltd.; prefabricated garages, Hills (West Bromwich) Ltd.; stairtreads and internal sills, Terrazzo floor, w.c. partitions, Conways Ltd.; door furniture, Laidlaw & Thomson Ltd.; casements and window furniture, Doodson & Bain Ltd.; folding gates, Bolton Gate Co. Ltd.; rolling shutters, fireproof doors, Mather & Platt Ltd.; plaster, W. J. Roberts & Son Ltd.; metalwork, Duxbury Hartley & Co. Ltd.; travertine facing, J. & H. Patteson Ltd.; tiling, Conways Ltd.; wallpapers, John Line & Co. Ltd.; furniture, Bath Cabinet Co. Ltd.; shrubs and trees, Clibrans Ltd.; lifts (passenger), Waygood Otis Ltd., (goods), J. & E. Hall Ltd.

Announcements

Mod-X Structures Ltd. have moved their Design Staff to new offices at 20, Lowndes Street, S.W.1, where they will be pleased to receive trade catalogues.

A new Joint Service Committee has been formed by the North Western Regional Committee of the Coal Utilisation Council. The new committee, to be known as the Warrington Joint Service Committee of the C.U.C., has as its chairman Mr. H. G. Freeman, of Messrs. J. Pendlebury & Co. Ltd., and as its secretary, Mr. L. W. Bowyer, of Messrs. John W. Duncan (Warrington) Ltd.

Mr. E. S. Mackay has been appointed manager of the Leicester Branch office of British Insulated Callender's Cables Ltd. In the same company, Mr. G. A. Rendle, B.SC., M.I.E.E., has been appointed manager (Cable Contracts) in succession to Mr. C. H. Frankland, M.I.E.E.

Tretol Ltd., have moved into new offices at Tretol House, The Hyde, London, N.W.9. (Telephone: Colindale 7223, 10 lines.)

Standard Telephones & Cables Ltd. have recently moved their branch office and cable depot (rubber, plastic and textile insulated) to new premises at the following address:—Standard Telephones & Cables Ltd., Newport Cable Division, 6/8, York Place, Leeds 1. Telephone: Leeds 22900.

Messrs. Hills (West Bromwich) Ltd., have moved into new office and factory premises in Newcastle-upon-Tyne at Back Heaton Park Road, Newcastle 6. Telephone: 59081/2. All sales enquiries will, as before, be dealt with by the Hills' Area Agents, William Mathwin & Son (Newcastle) Ltd., Exchange Buildings, Lombard Street, Newcastle-upon-Tyne 1. Telephone: Newcastle 111.

Mr. G. H. Kendall has joined the board of Messrs. Henry Hargreaves & Sons Ltd., Engineers, Cook Street, Bury, Lancs. In addition the following members of the Staff have been appointed to the Board:—Mrs. A. A. Currie (secretary), Mr. J. Bleakley, Mr. G. Murphy, A.M.I.MECH.E., Mr. Harry Hargreaves, J.P., becomes chairman, and Mr. H. Gordon Hargreaves, managing director.

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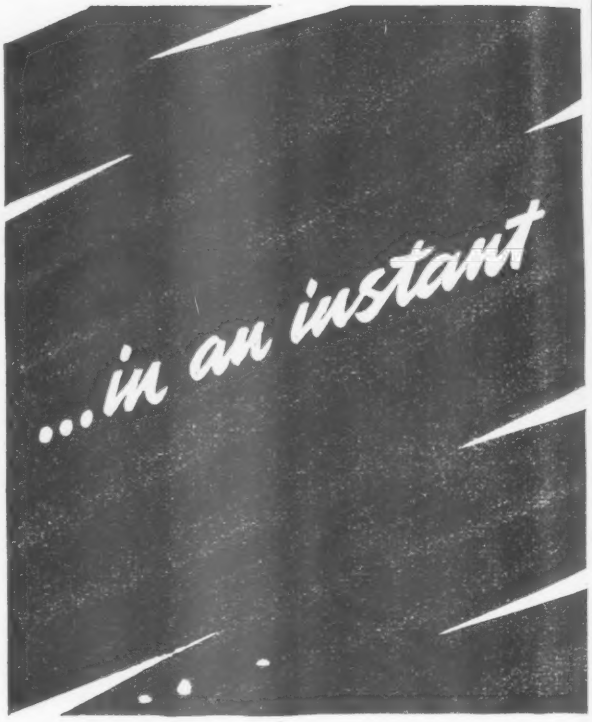
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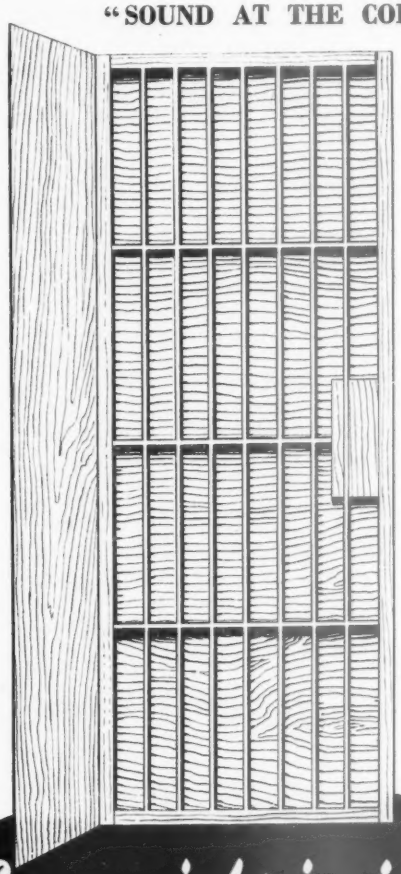
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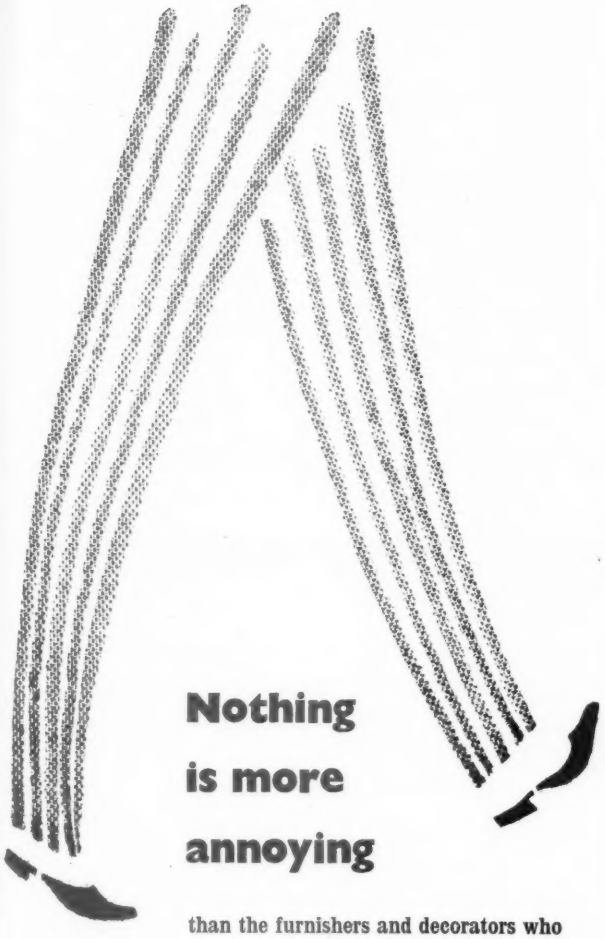
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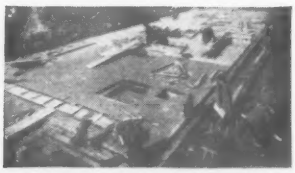
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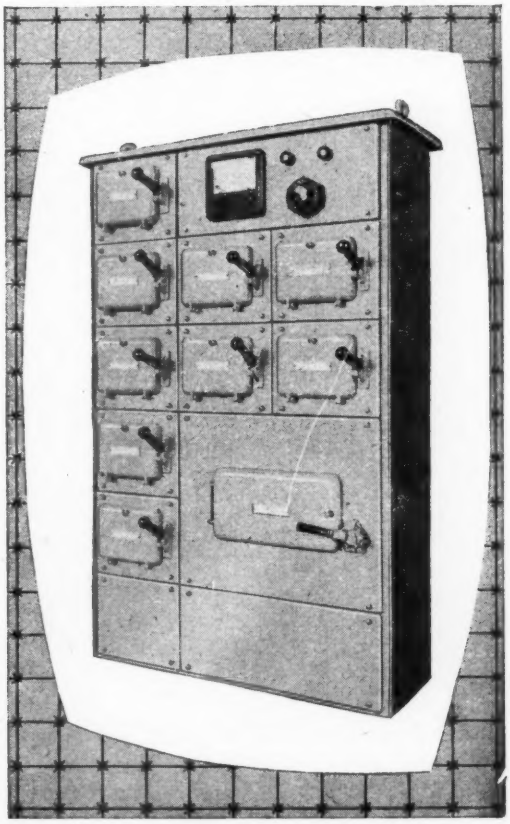
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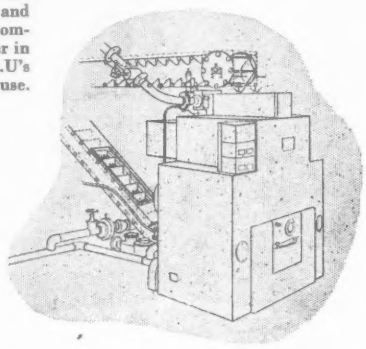
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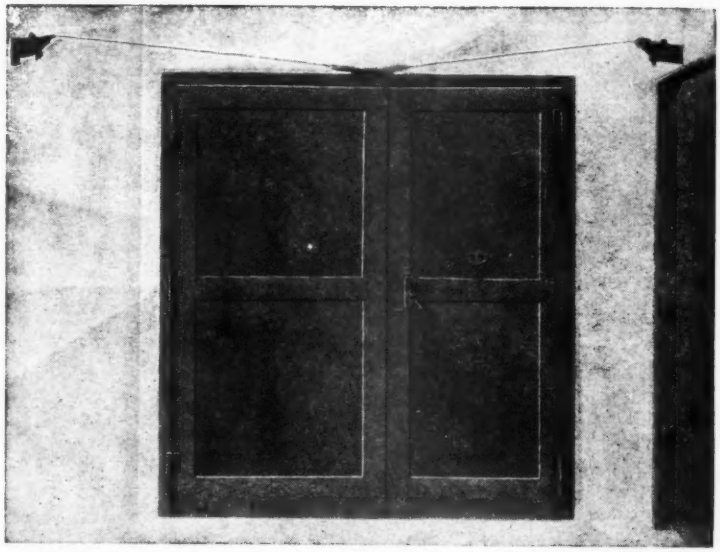
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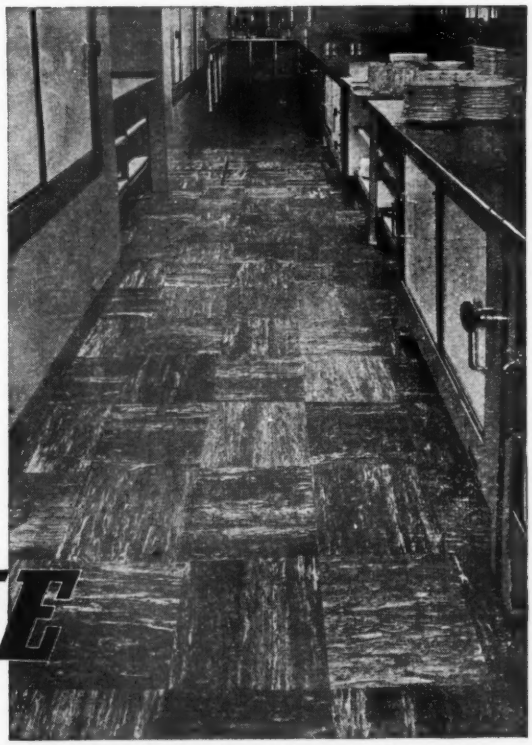
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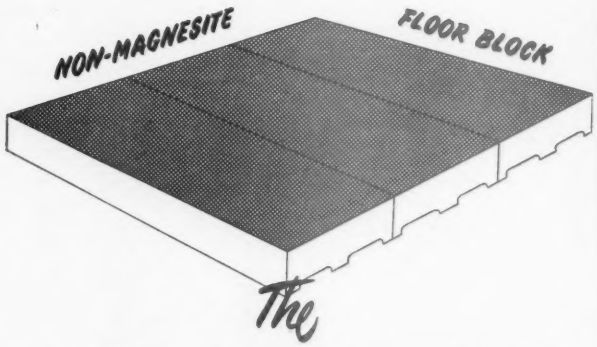
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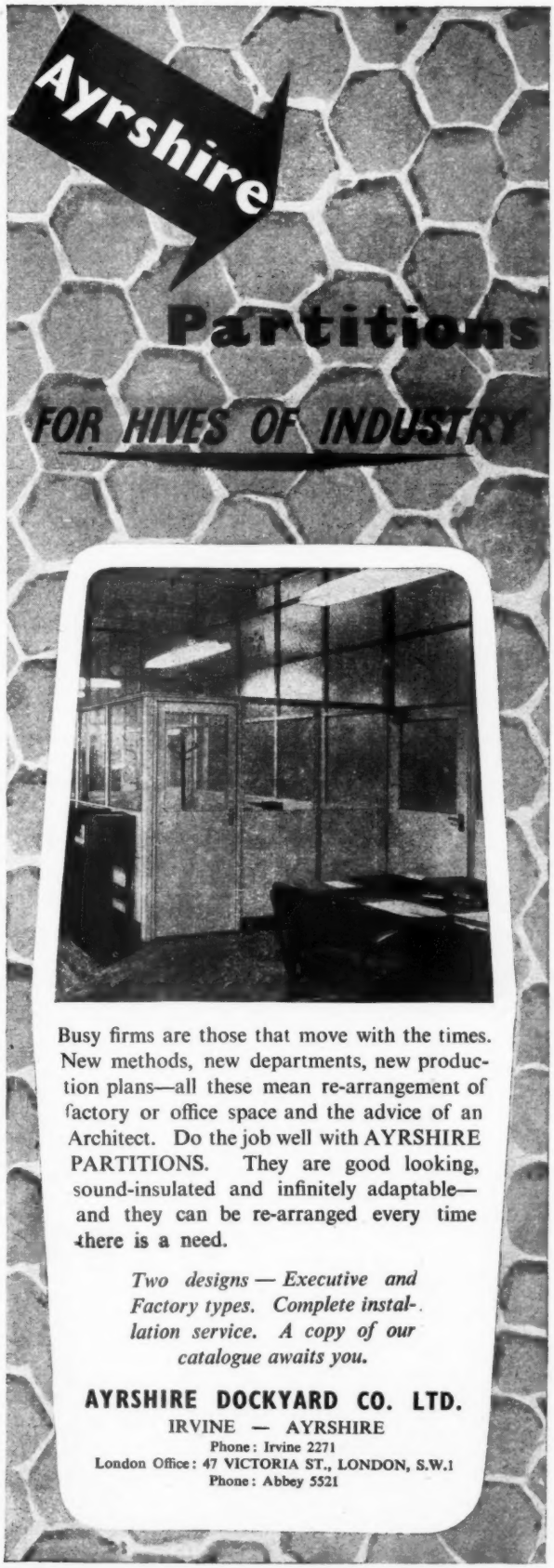
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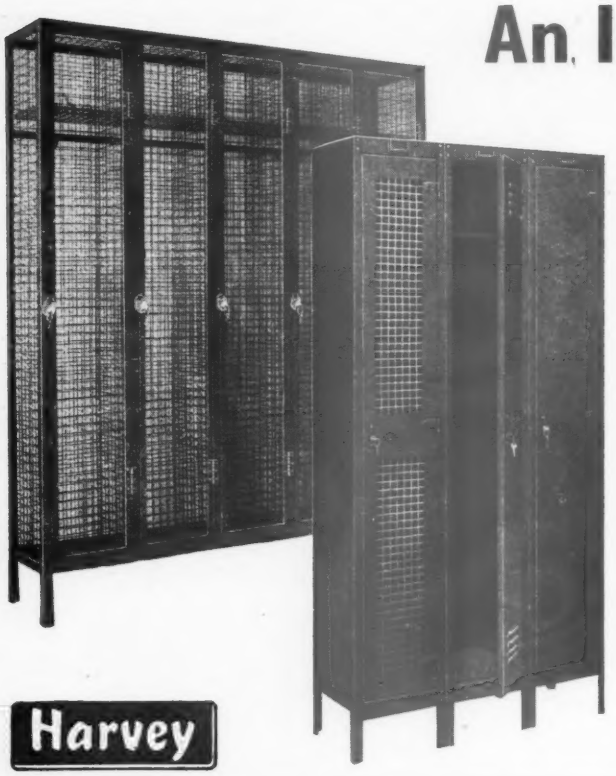


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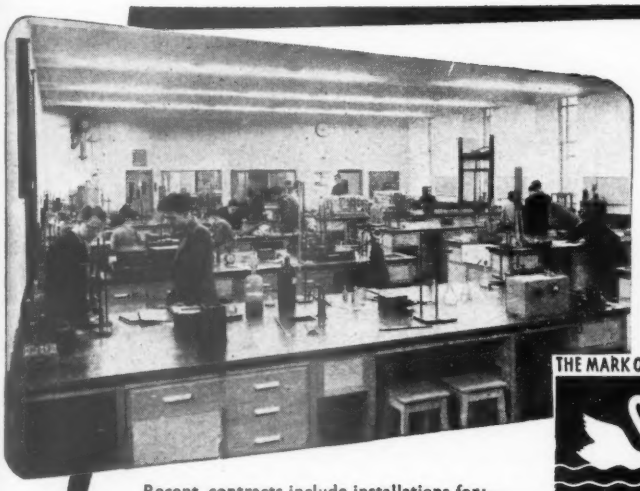
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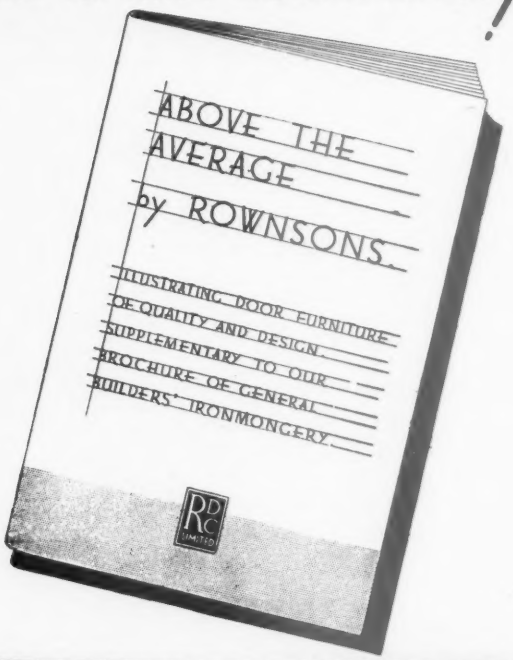
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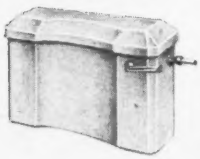




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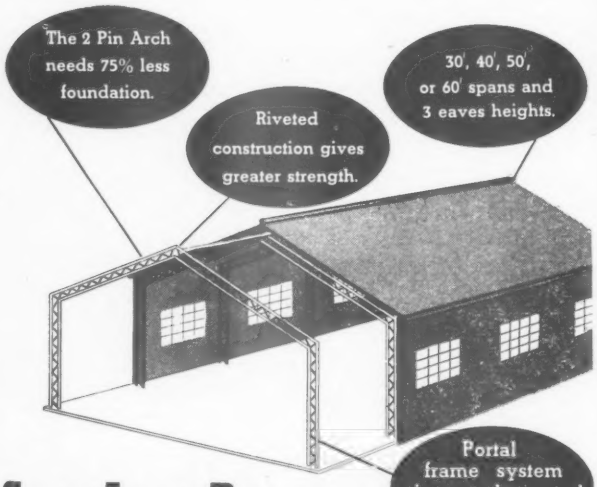


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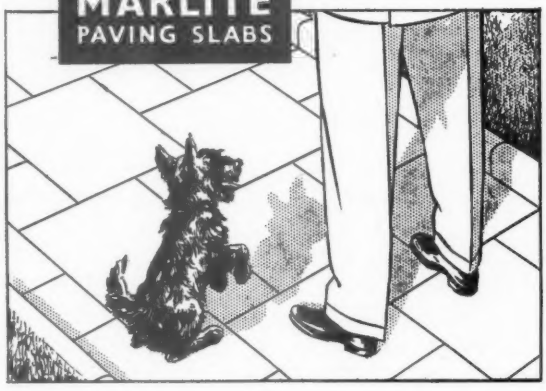
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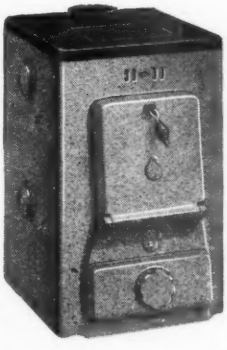
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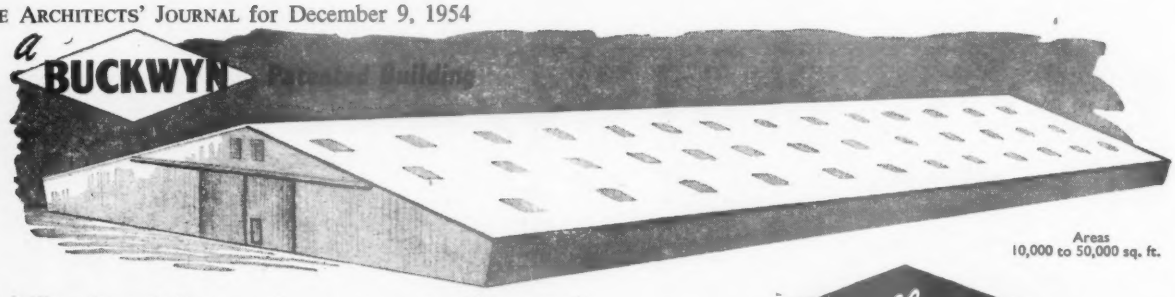
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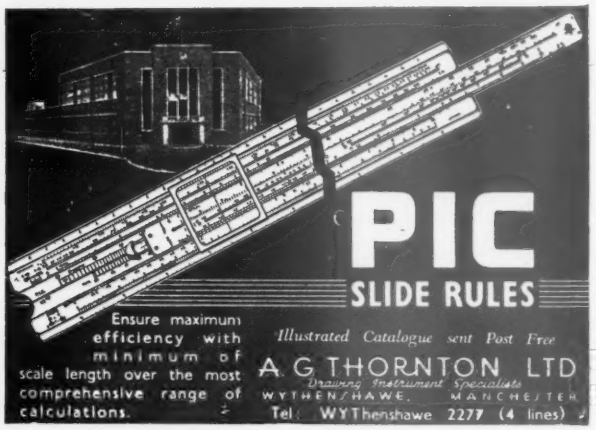
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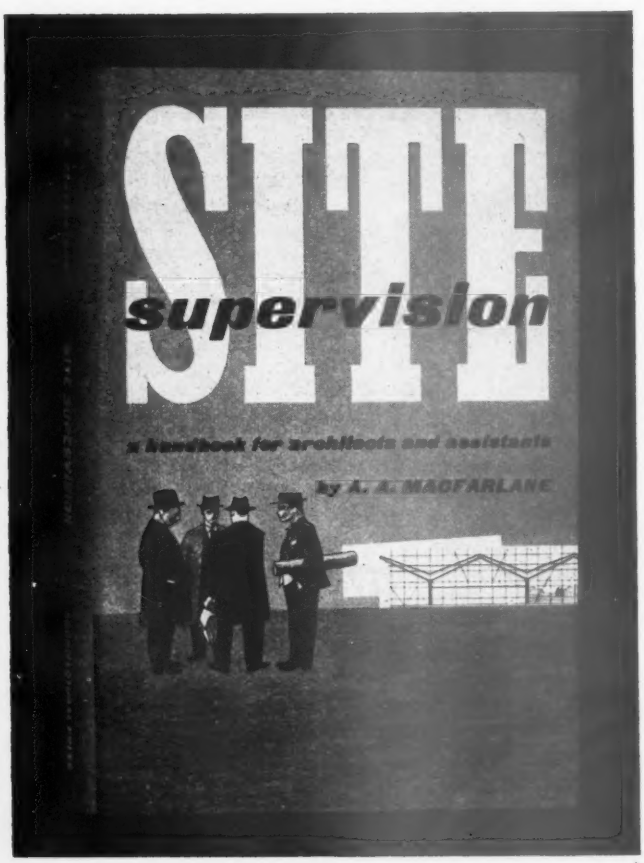
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Replies to Box Numbers should be addressed care of "The Architects' Journal," at the address given above.

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Superannuation. Medical examination. No. canvassing.

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WM. C. BROWNLIE,
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STANLEY DUMBELL,
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C. PETER CLARKE.
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The appointment is superannuable and subject to one month's notice on either side.

Applications, giving full details of age, experience, together with the names and addresses of two referees, should be delivered to the Secretary at the address below not later than 16th December, 1954.

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Applicants for (*a*) preferably should have considerable experience in the design and construction of new schools and be capable, if required, of supervising the work of junior assistants, and for (*b*) good general experience of housing and other local authority building work.

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Application forms may be obtained from T. V. Burrows, City Surveyor, Guildhall, Cambridge, and should be returned to him by Saturday, 18th December, 1954.

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The Guildhall,
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Canvassing is prohibited. 5012

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FERMANAGH COUNTY EDUCATION COMMITTEE.

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(*b*) Pass in Inter. Exam. of R.I.B.A. and minimum of four years' experience in Architect's office.

Forms of application and conditions of appointment may be obtained from the undersigned, with whom completed applications must be lodged not later than Tuesday, 4th January, 1955.

Preference will be given to suitably qualified ex-Service applicants if the Committee is satisfied that such applicants can, or within a reasonable time will be able to, fill the post efficiently.

J. MALONE.
Chief Education Officer.

Education Office,
Enniskillen,
Northern Ireland.
26th November, 1954. 4943

BATTERSEA M.B.C. require TWO ARCHITECTURAL ASSISTANTS. Salary scale applicable from 1st January, 1955, £560—£640 (new Grade A.P.T. II), plus London weighting. L. G. Supn. Act. Commencing salary according to experience but previous local government experience not essential. Work of the Department includes public buildings and multi-storey flats. Application forms from Borough Engineer, Town Hall, Battersea, S.W.11. Closing date, 20th December. 4924

WARWICKSHIRE COUNTY COUNCIL.

ARCHITECT'S DEPARTMENT.

Applications are invited for a BUILDING INSPECTOR Grade A.P.T. III (£600—£725). Applicants must have a good knowledge of all building trades and be able to write reports, specifications and be capable of maintaining County buildings along with the supervision of new works. Applicants must be able to drive a car which will be provided by the Council.

The appointment is on the established staff and subject to the provisions of the Local Government Superannuation Acts, 1937—1953, and the successful applicant will be required to pass a medical examination.

Application is to be made on a form which can be obtained from G. R. Barnsley, F.R.I.B.A., County Architect, Shire Hall, Warwick.

L. EDGAR STEPHENS,
Clerk of the Council.

Shire Hall,
Warwick.
3rd December, 1954. 4944

BEDFORDSHIRE COUNTY COUNCIL invite applications for SENIOR PLANNING ASSISTANT (New) A.P.T. V from Fellows or Associates of the R.I.B.A., and preferably Corporate Members of the T.P.I. Experience in preparation of housing layouts essential. N.J.C. service conditions; car allowance, post pensionable; medical examination. Application forms from County Planning Officer, 61, High Street, Bedford, to be returned by 1st January. 5003

COUNTY BOROUGH OF DONCASTER.

BOROUGH ARCHITECT'S DEPARTMENT.

Applications are invited for the following appointments in the Borough Architect's Department:—

(*a*) Two ASSISTANT QUANTITY SURVEYORS, Grade A.P.T. VII (£735 × £25—£810).

Applicants must be A.R.I.C.S. and have had good experience in the preparation of Bills of Quantities for all types of work, valuation for interim certificates and the settlement of final accounts.

(*b*) Two ASSISTANT ARCHITECTS, Grade A.P.T. VI (£695 × £20 × £20 × £25—£760).

Applicants must be A.R.I.B.A. and have had good experience in the preparation of sketch schemes and working drawings for all types of buildings.

(*c*) ASSISTANT ARCHITECT (Housing Section), Grade A.P.T. V (£620 × £15 × £15 × £20—£670).

Applicants must be A.R.I.B.A. and have had good experience in the preparation of sketch schemes and working drawings.

(*d*) ARCHITECTURAL ASSISTANT, Grade A.P.T. III (£550 × £15—£595). Applicants must have passed the Intermediate Examination of the R.I.B.A., and had experience in an architectural office.

The above appointments will be subject to one month's notice on either side and to the National Joint Council's Scheme of Conditions of Service and to the terms of the Local Government Superannuation Acts 1937 and 1953. The successful applicants will be required to pass a medical examination.

Housing Accommodation will be available, if necessary, for posts (*a*), (*b*) and (*c*).

Forms of application can be obtained from the Borough Architect, L. J. Tucker, A.R.I.B.A., F.I.Hsg., 15, South Parade, Doncaster, and must be returned to the undersigned not later than 10 a.m., Monday, the 20th December, 1954.

Canvassing directly or indirectly will be a disqualification.

H. R. WORMALD,
Town Clerk.

1, Priory Place,
Doncaster.
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GOLD COAST LOCAL CIVIL SERVICE.

TOWN PLANNING OFFICERS.

Vacancies for Town Planning Officers exist in the Local Civil Service of the Gold Coast. Appointments are on contract for two tours of 18—24 months each in the salary scale £1,180 to £2,020 per annum gross, point of entry determined by qualifications and approved experience. A gratuity of £37 10s. for each completed three months' satisfactory service also payable.

Free first class passages are provided for the officer, his wife and children up to three in number under the age of 13. Government quarters, if available, are provided at a rental of £75 to £90 per annum. Leave is granted at the rate of seven days for each month of resident service after a tour of eighteen to twenty-four months.

Candidates, who should be under 45, must hold the qualifications of A.M.T.P.I. (or a recognised exempting qualification) and either A.R.I.B.A., A.M.I.C.E., or A.M.I.Mun.E., and have had at least three years' experience in the Planning Office of a Public Body or Planning Consultants.

Apply in writing to the Director of Recruitment, Colonial Office, Great Smith Street, London, S.W.1, giving briefly age, qualifications and experience. Mention the reference No. BCD.163/13/03. 4955

COUNTY BOROUGH OF BLACKBURN.
ARCHITECTURAL ASSISTANT A.P.T. GRADE V—£620—£670.

Applications invited for this appointment on permanent staff of Borough Engineer's Department. Candidates should be registered Architects and experienced in design and construction of schools and Municipal Buildings. Preference given to Associates of the R.I.B.A. Applications, stating age, qualifications and experience, with testimonials, to Borough Engineer, Town Hall, Blackburn, by December 20th.

CHAS. S. ROBINSON,
Town Clerk.
4967

BOROUGH OF DOVER.
SENIOR ASSISTANT ARCHITECT.

Applications are invited for this appointment in the Borough Engineer's Department. Salary A.P.T. Grade V of the National Scales (£620/£670 per annum).

Applicants should hold a recognised architectural qualification, and have had practical experience with a local authority on housing work.

Applications, stating age, experience and qualifications, together with the names and addresses of three referees, must be delivered to the Borough Engineer, Brook House, Dover, not later than the 20th December, 1954.

Housing accommodation will be provided, if required.

JAMES A. JOHNSON,
Town Clerk.

New Bridge House,
Dover.
29th November, 1954. 4957

CITY AND COUNTY OF BRISTOL.
PLANNING ASSISTANT.

Applications invited for the above appointment in the City Engineer and Planning Officer's Department at a salary in accordance with Grade A.P.T. V (£620—£670 p.a.). Applicants must have passed Final Examination of Town Planning or other appropriate Institute and have had considerable experience in the preparation of a Development Plan and the control of development. Post superannuable, and successful applicant must pass a medical examination.

Applications giving age, qualifications, present and previous appointments and full details of experience, together with names of two referees should be sent to the City Engineer and Planning Officer, 470, Bath Road, Bristol, 4, by December 21st, 1954. 4959

ROYAL BOROUGH OF KINGSTON-UPON-THAMES.
APPOINTMENT OF FIRST ARCHITECTURAL ASSISTANT, EXISTING GRADE A.P.T. VI.

Commencing salary £695 (plus London Weighting). Post will be merged into new negotiated grade when published by National Joint Council and salary paid accordingly. Details and application form obtainable from Borough Surveyor, Guildhall, Kingston-upon-Thames, to whom applications must be sent by 3rd January, 1955. Canvassing will disqualify.

A. B. ROGERS,
Town Clerk.

Guildhall,
Kingston-upon-Thames. 5011

STAFFORDSHIRE COUNTY COUNCIL
EDUCATION COMMITTEE.

Appointment of SECTION LEADER, Salary Grade A.P.T. VIII £795—£860 per annum (New Grade V).

Applicants must be Associates of the Royal Institute of British Architects and have appreciable experience in design and construction, preferably in schools. Ability to take control of a Section is essential.

Forms of Application may be obtained from: the County Education Architect, Green Hall, Lichfield Road, Stafford, and must be returned completed within three weeks of this advertisement.

T. H. EVANS,
Clerk of the County Council.
4970

GOVERNMENT OF NORTHERN IRELAND.
CIVIL SERVICE COMMISSION.
VACANCY FOR ARCHITECT.

Applications are invited for the permanent and pensionable post of ASSISTANT ARCHITECT Class II in the Works Directorate, Ministry of Finance.

The salary scale is £675 × £25—£750 × £30—£960 × £40—£1,000. The minimum is linked to age 26, plus an increment for each year above that age, subject to a commencing salary not exceeding £900. An officer between 25 and 26 will be given a commencing salary of £650; and if under 25 will be paid according to qualifications and experience.

Candidates must be Registered Architects by examination, and must have had at least two year's experience in an Architect's Office in the preparation of working drawings for new buildings.

Preference will be given to a suitably qualified candidate who served in H.M. Forces during the 1914-18 or 1939-45 war, provided the Commissioners are satisfied that such a candidate is, or within a reasonable time will be, able to discharge the duties of the post efficiently.

Application forms may be obtained from the Secretary, Civil Service Commission, Stormont, Belfast, to whom they must be returned, with copies of two recent testimonials, so as to reach him not later than the 31st December, 1954. 4999

PERTH AND KINROSS JOINT COUNTY COUNCIL require JUNIOR ARCHITECTURAL ASSISTANTS for County Architect's Department. Salary £490—£535. Applicants should have reached R.I.B.A. Intermediate standard or equivalent. Particulars and form of application from County Clerk, County Offices, York Place, Perth. Applications to be lodged by 20th December, 1954. 4984

PADDINGTON BOROUGH COUNCIL.
require QUANTITY SURVEYOR'S ASSISTANT, A.P.T. (new) grade I (£530—£610 inclusive) (£10 p.a. less if under age 26). Candidates should have experience in preparation of estimates, working up, abstracting, billing, site measurement and working up to final account stage. Inter R.I.C.S. or equivalent preferred. Write age, experience, qualifications, names of three referees to the undersigned by 22nd December, 1954 (Quoting A.190).

W. H. BENTLEY,
Town Clerk.

Town Hall,
Paddington Green, W.2. 4983

PADDINGTON BOROUGH COUNCIL.
require ARCHITECTURAL ASSISTANT, A.P.T. (new) grade II (£590—£670 inclusive). Candidates should have Inter R.I.B.A. and be used to preparing working and detail drawings; be good draughtsman and been engaged on and interested in the best contemporary architecture. Write age, qualifications, experience, present and past appointments and names and addresses of three referees to the undersigned by 22nd December, 1954 (Quoting A.189).

W. H. BENTLEY,
Town Clerk.

Town Hall,
Paddington Green, W.2. 4982

PADDINGTON BOROUGH COUNCIL.
require JUNIOR to train as QUANTITY SURVEYOR'S ASSISTANT. Salary £200 p.a. at age 16, rising to £505 p.a. at age 23. Candidates should possess G.C.E. (three passes at Ordinary Level). The post affords an opportunity and experience for candidates studying for Quantity Surveying Professional Examinations. National Conditions of Service. Superannuation. Write age, experience, education, and names of two referees to the undersigned by 22nd December, 1954 (Quoting A.191).

W. H. BENTLEY,
Town Clerk.

Town Hall,
Paddington Green, W.2. 4981

STEVENAGE DEVELOPMENT CORPORATION.
CHIEF ARCHITECT'S DEPARTMENT.

Applications are invited for the appointment of an ASSISTANT CHIEF ARCHITECT on a salary of approximately £1,200—£1,400 per annum.

Duties will include co-ordination of the work of the architectural and planning groups and the day-to-day administration of the Department.

Applicants must have passed the final examination of the R.I.B.A., or its equivalent, and have had at least seven years' experience, after qualification, in the design and administration of large building schemes and the supervision of staff.

Housing accommodation will be available in due course in an appropriate case.

Applications, giving details of experience and names of two referees, should be sent to the Chief Administrative Officer, Aston House, near Stevenage, Herts., not later than Wednesday, 22nd December. 4979

The Metropolitan Borough of Hampstead require JUNIOR ARCHITECTURAL ASSISTANT. Salary: Higher General Division (£170—£475), plus London Weighting. Medical examination. No housing provided. Applications suitably endorsed, giving three referees, to the Town Clerk, Town Hall, Haverstock Hill, N.W.3. Closing date 22nd December, 1954. 4977

COUNTY BOROUGH OF EASTBOURNE.
BOROUGH ENGINEER & SURVEYOR'S DEPARTMENT.

ASSISTANT ENGINEER: New A.P.T. III (£600 × £25—£725).

ASSISTANT ARCHITECT: New A.P.T. IV (£675 × £30—£825).

QUANTITY SURVEYING ASSISTANT: New A.P.T. I (£500 × £20 × £580).

Applications are invited for the above appointments.

Applications, giving full particulars of age, present position and salary, qualifications and experience, together with the names of two referees, to be sent to the undersigned by Noon on Monday the 13th December, 1954.

RAYMOND WILLIAMS, B.Sc., A.M.Inst.C.E.,
Borough Engineer & Surveyor.

2/4 Saffrons Road,
Eastbourne, Sussex.
30th November, 1954. 4976

NATIONAL COAL BOARD.
SOUTH WESTERN DIVISION.

A vacancy exists in Cardiff for an ARCHITECTURAL ASSISTANT, Grade I within the salary scale of £525—£650 (male) and £420—£520 (female).

Applicants should have passed the R.I.B.A. Intermediate Examination and have had at least three years' subsequent office experience or have passed the Final Examination but had some practical experience in the preparation of sketch plans, working drawings and details.

Full particulars, including the names of two professional referees, to be submitted within 14 days to Secretariat (E), National Coal Board, South Western Division, Cambrian Buildings, Mount Stuart Square, Cardiff. 5004

COUNTY COUNCIL OF DURHAM.
COUNTY PLANNING DEPARTMENT.

Applications are invited for the following permanent appointments in the County Planning Department:—

(*a*) TWO PLANNING ASSISTANTS for work mainly in connection with Town Maps. Salary Grade IV, A.P.T., £675—£825. Applicants must have passed the final examination of the Town Planning Institute.

(*b*) ONE PLANNING ASSISTANT Grade III A.P.T. £600—£725. Applicants must have passed the final examination of either the Town Planning Institute or the Royal Institution of British Architects and have had considerable experience of local authority housing layouts.

(*c*) ONE PLANNING ASSISTANT, Grade I A.P.T. £500—£580. Applicants should at present be undertaking a course of study leading to an appropriate town planning qualification and have had practical experience in a planning office.

(*d*) ONE DRAUGHTSMAN, Miscellaneous Grade III £395—£460. Applicants must have had considerable experience in draughtsmanship, colouring and presentation, preferably in a Planning or Architect's office.

(The commencing salary in each case will be at the minimum.)

Posts superannuable and subject to medical examination. Canvassing will disqualify. Apply with particulars of age, married or single, qualifications, experience, present appointment and salary, giving names of two persons to whom reference may be made, to the County Planning Officer, 10, Church Street, Durham, by Wednesday, 22nd December, 1954.

J. K. HOPE,
Clerk of the County Council.

Shire Hall, Durham. 5005

NORFOLK COUNTY COUNCIL.

ARCHITECTURAL ASSISTANT required. Salary A.P.T. I (£500—£580 per annum). Local Government Superannuation Acts and National Joint Council Conditions of Service apply. Candidates must be good draughtsmen with general office experience. Applications stating age and giving details of training, experience, present appointment and salary, and names of three referees, to County Architect, 27, Thorpe Road, Norwich, by 3rd January, 1955. 5000

GLOUCESTERSHIRE COUNTY COUNCIL.
COUNTY PLANNING DEPARTMENT.

Applications are invited for the following appointments:—

(*a*) ARCHITECTURAL ASSISTANT A.P.T. Grade VI (£695—£760). Amended grade A.P.T. IV (£675 × £30—£825) from 1st January, 1955.

(*b*) TECHNICAL ASSISTANT A.P.T. Grade II (£520—£565).

Applicants for (*a*) must be qualified architects with experience in Civic Design and large housing layouts. Applicants for (*b*) must have passed the intermediate examination of the Town Planning Institute or equivalent and should have an architectural inclination.

The posts are superannuable subject to Medical examination. The National Joint Council's Scheme of Conditions of Service will apply.

Applications stating age, qualifications and experience together with copies of three testimonials, or names of referees, to reach the County Planning Office r Upton Lane, Barnwood, Gloucester, not later than 18th December, 1954.

GUY H. DAVIS,
Clerk of the County Council.
4980

COUNTY COUNCIL OF THE COUNTY OF LANARK.
PROPERTY DEPARTMENT.

Applications are invited for ARCHITECTURAL ASSISTANTS, on A.P.T., Grade VII (£745-£820), and A.P.T., Grade V (£630-£680). Must have thorough knowledge of all architectural work, with practical experience in design and preparation of working drawings for erection of schools, public buildings, and police houses, etc. Placing according to qualifications and experience.

Posts superannuable. Medical examination. No canvassing.

Applications, stating age, qualifications and experience, together with the names and addresses of three referees, to be sent to W. R. Watt, County Architect, 34, Albert Street, Motherwell, not later than 18th December, 1954.

WM. C. BROWNLIE,
County Clerk.

Lanarkshire House, 191, Ingram Street,
Glasgow, C.1. 4989

WESTMORLAND COUNTY COUNCIL.
COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for appointment of Building Inspector, Grade A.P.T. II, £560—£640, commencing salary according to experience. Superannuable appointment, subject to medical examination. Duties include mainly maintenance of Schools, Police Houses, etc., and some supervision of minor new projects. A working knowledge of heating installations and kitchen equipment would be an advantage. Applicants should be capable of preparing reports and rough estimates. Experience of or willingness to work in rural areas desirable. Ability to drive a car essential.

Applications stating age, married status, technical training and qualifications, previous and present appointments and salary, full details of experience in the above categories, and names of two Referees, to County Architect, County Hall, Kendal, by 21st December, 1954.
30th November, 1954. 5013

MINISTRY OF HOUSING AND LOCAL GOVERNMENT; HOUSING AND PLANNING INSPECTORS. The Civil Service Commissioners invite applications for nine pensionable posts in London. Duties include the conduct of public local inquiries in any part of England and Wales into matters arising under the Housing Acts and Town and Country Planning Acts. Qualifications one or more of the following:—Registered Architect by examination; Corporate membership of:—Town Planning Institute; Institution of Civil Engineers; Institution of Municipal Engineers; Royal Institution of Chartered Surveyors; Chartered Auctioneers and Estate Agents' Institute; Land Agents Society. Practical experience in housing, preferably local authority housing, or in town and country planning is necessary. Age at least 35 on November 1, 1954. Salary (men), including extra duty allowance, where payable, £1,080 to £1,425. Starting pay according to age up to £1,209 at 40. Somewhat lower for women. Starting pay above appropriate age pay if exceptionally well qualified; promotion prospects.

Particulars and application form from Secretary, Civil Service Commission, Scientific Branch, 30, Old Burlington Street, London, W.1, quoting No. 8440 6/55.

Applications to be returned by 19th January, 1955. 5001

THE UNIVERSITY OF LIVERPOOL.

Applications are invited for the post of LECTURER (Grade II) in the Department of Civic Design, at an initial salary within the range £550—£1,000 per annum, according to age, qualifications and experience.

Applications, stating age, qualifications and experience, together with the names of three referees, should be received not later than Thursday, 23rd December, 1954, by the undersigned, from whom further particulars may be obtained.

STANLEY DUMBELL,
Registrar.
4973

HERTFORDSHIRE COUNTY PLANNING DEPARTMENT.
PLANNING ASSISTANT.

A.P.T. V, £620—£670 (Subject to Review).

The Person appointed will work on matters connected with the County Development Plan and Survey. Must be capable of supervising the work of a section of the Drawing Office.

Should be A.M.T.P.I., or possess a University Degree in Geography or Economics, or a qualification in Architecture, Engineering or Surveying.

Application forms from Mr. E. H. Doubleday, O.B.E., F.T.P.I., County Planning Officer, County Hall, Hertford. Applications due 18th December, 1954. 5007

BOROUGH OF BRIDLINGTON.

Applications are invited for appointment of ARCHITECTURAL ASSISTANT, Salary New Grade A.P.T. III—£600—£675 p.a. Candidates must be Registered Architects and preference will be given to those who have passed the R.I.B.A. examination, have good architectural training, and are experienced in general Architectural work, particularly Housing. Applications, with names of three referees, must be received by undersigned not later than 31st December, 1954.

Housing Accommodation available if required.

S. BRIGGS,
Town Clerk.
4969

CITY OF WINCHESTER.
CHIEF ASSISTANT ARCHITECT.

Applications are invited from qualified Architects for the appointment of CHIEF ASSISTANT ARCHITECT in the City Engineer's Department, at a salary at a point within new Grade IV of the A.P.T. Division of the National Scales, *i.e.*, £675, rising by annual increments of £30 to £825.

Candidates should be Corporate Members of the Royal Institute of British Architects and have had previous experience in the design and preparation of plans and details for houses on Municipal Housing Estates, including the supervision of work under contract.

The appointment is a permanent one, terminable on either side by a month's notice in writing, and the successful candidate will be directly responsible to the City Engineer. Consideration will be given to the provision of housing accommodation.

Applications stating age, present salary, present and previous appointments, details of training and experience, together with names and addresses of three referees, should reach the undersigned not later than 16th December, 1954.

R. H. McCALL,
Town Clerk.

Guildhall,
Winchester.
2nd December, 1954. 5008

WEST SUSSEX COUNTY COUNCIL.
COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for the appointment of an ASSISTANT ARCHITECT at a salary in accordance with the amended Grade IV A.P.T. Division (£675 to £825 per annum) of the National Scales of Salaries.

Further particulars should be obtained from the County Architect, County Hall, Chichester, to whom detailed applications must be submitted not later than the 5th January, 1955.

T. C. HAYWARD.
Clerk of the County Council.

County Hall,
Chichester.
1st December, 1954. 5010

ROYAL BOROUGH OF KINGSTON-UPON-THAMES.

ARCHITECTURAL DRAUGHTSMAN required in department of Borough Surveyor. Salary in accordance with Miscellaneous Division Grade III (at present £395—£460 per annum plus London Weighting). Candidates must be over 21 years of age and have completed their National Service. Further details obtainable from Borough Surveyor, to whom applications on the form prescribed must be sent by 20th December, 1954.

A. B. ROGERS,
Town Clerk.
29th November, 1954. 4968

Architectural Appointments Vacant

4 lines or under, 7s. 6d.: each additional line. 2s.

The engagement of persons answering these advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 18-64 inclusive or a woman aged 18-59 inclusive unless he or she or the employment is excepted from the provisions of the Notification of Vacancies Order, 1952.

REQUIRED for Architects' office, Central London area, young qualified ASSISTANTS interested in design and construction. Write, stating experience and salary required. Box 3325.

BUILDING SURVEYING ASSISTANT (about R.I.C.S. Final Standard) with at least two years' practical experience required by City firm of Chartered Surveyors & Architects. 3925

ARCHITECTURAL ASSISTANTS. Simon-Carves Ltd. have two vacancies for ARCHITECTURAL ASSISTANTS interested in reinforced concrete industrial structures. The work offers excellent experience and good scope. A Pension Fund is in operation. Write, quoting ref. (JIZ73), to Staff & Training Division, Simon-Carves Ltd., Cheadle Heath, Stockport 4945

ARCHITECTURAL ASSISTANT urgently required, experienced in preparation of working Drawings, Details, Specifications and supervision, for South-West London office. Apply in writing giving full particulars of experience, age and salary required to Box 4797.

ARCHITECTURAL ASSISTANT of at least Intermediate Standard required by South London Architect for domestic and factory work. Reply stating salary and full particulars to Box 4806.

WORKS ARCHITECT, qualified man required by Large Engineering Company. Applicant should have had extensive experience of Factory and Office Buildings. Apply giving full details of age, experience and salary required to Personnel Manager, Box 4809.

THE BRITISH THOMSON-HOUSTON CO., LTD., Rugby, have immediate vacancies for the following staff:—ASSISTANT ARCHITECT, Senior Grade, to take charge of section of office. Experience of industrial work essential and fully familiar with all activities of the profession. ARCHITECTURAL DRAUGHTSMAN fully experienced in the preparation of all drawings, detailing etc. STRUCTURAL ENGINEER, Senior Grade, required to design and negotiate all steelwork and reinforced concrete structures, to be responsible for a variety of work in the architect's section. QUANTITY SURVEYOR, Senior Grade, to take control of quantity surveying practice in the architect's section. CLERK OF WORKS to supervise the erection of building contracts at Rugby and Midlands Area. Applications should be addressed to the Head of Personnel Department stating full details of experience, past and present employers, salary required. Copies of references should be provided. 4751

ASSISTANT, Inter.-Final standard, good draughtsman. Interesting work. E. B. Musman & Partners, 12, Upper Berkeley Street, W.1. 4907

CIVIL ENGINEERING DRAUGHTSMEN (General) required by the Steel Company of Wales Limited (Steel Division) Port Talbot.

Applicants' experience should cover the design of buildings, R.C. structures, roads, drains, etc.

Qualifications to Higher National Certificate desirable.

Permanent and pensionable positions offered to suitable men with rates varying with age and qualifications.

Those wishing to apply should send full particulars of age, qualifications, experience, etc., to the:—

Personnel Superintendent, The Steel Company of Wales Limited, P10. Box No 3. Port Talbot, Glam. 4918

ARCHITECTURAL ASSISTANT with good all round experience required in West End office. One able to take charge of jobs from sketch plan stage to completion. Reply giving age, experience and salary required to Box 4774.

JUNIOR ARCHITECTURAL ASSISTANT required at once in Southampton office. Applicants must be first-class draughtsmen and have completed National Service. Write, giving age, training, and experience, and present salary. Box 4909.

SENIOR ASSISTANT required in busy practice in West End. Age about 30 years, qualified with several years' experience and capable of running contracts. JUNIOR ASSISTANT also required. In early twenties, Intermediate R.I.B.A., with at least two years' experience. Box 4741.

ARCHITECTURAL ASSISTANTS required in Central London area. Applicants must be capable of fast and accurate draughtsmanship and have sound knowledge of building construction. Scope of work includes Home and Overseas Clubs, Canteens, Bakeries, Warehouses and Shops. Salary at about £650 per annum depending on age and experience. Box 8172, c/o Charles Barker & Sons Ltd., 31, Budge Row, London, E.C.4. 4917

SENIOR ASSISTANT ARCHITECTS required with experience of work on commercial and industrial buildings. Salaries up to £915 per annum for suitably qualified applicants.

ASSISTANT ARCHITECTS also required, capable of preparing working drawings and details from preliminary sketches. Salaries up to £745 per annum.

Applications stating age, experience, qualifications and salary required to G. S. Hay, A.R.I.B.A., Chief Architect, Co-operative Wholesale Society Ltd., 1, Balloon Street, Manchester. 4919

ASSISTANTS required Manchester District—one qualified or of final standard, one intermediate standard. State salary required. Box 4858.

ARCHITECTURAL ASSISTANT required, R.I.B.A. Intermediate Standard with some previous experience for Architects office in London. Write stating age, experience and salary required to Box 4852.

ARCHITECTURAL ASSISTANT, of at least Inter R.I.B.A. Standard, required by Midland Firm designing "whole systems of construction" for large scale industrial and commercial projects. Good experience of accurate detailing essential. Salary according to ability and experience. Box 4861.

ARCHITECTURAL DRAUGHTSMEN required for design work on industrial buildings. Experience on similar work and Intermediate R.I.B.A. Standard essential. Five-day week. Staff pension scheme. Good transport and canteen facilities. Salary according to age, qualifications and experience. Write giving full details to:—Personnel Manager, Metropolitan-Vickers Electrical Co Ltd., Trafford Park, Manchester, 17. Mark envelope "Z." 4862

EXPERIENCED Senior and also Intermediate to Final standard ASSISTANTS required. Applicants to have knowledge of commercial work, including offices and stores, etc. London experience is essential. Box 4890.

PLYMOUTH Architects require ASSISTANT, with office experience. Quick and neat draughtsman, capable preparing working drawings and details for industrial and domestic work. Salary in region of £500, according to experience. Reply, quoting salary, Box 4886.

ARCHITECT'S ASSISTANT required by Sheffield Brewery Company. R.I.B.A. Inter-standard. State full particulars and salary required. Box 4887.

ARCHITECTURAL ASSISTANT, aged 23-27, with at least 3 years' drawing office experience, preferably in connection with industrial and commercial buildings, required by City firm of building surveyors. Salary £450-£600. Box 4888.

ARCHITECTURAL ASSISTANT: Intermediate approaching final. Commercial and industrial work; large-scale contracts. Watson, Johnson, Stokes, Victoria Square, Birmingham. 4895

EXPERIENCED ASSISTANT required by Architects in Gray's Inn. Work includes flats, hospitals, factories, etc. Reply with full details and salary required to Box 4866.

REQUIRED at once, ARCHITECTURAL ASSISTANT R.I.B.A. Intermediate standard or above. Office experience essential. Good draughtsman working drawings and details. Private practice. West Lancashire area. Salary according to age and experience. Write with details. Box 4868.

ARCHITECTURAL ASSISTANT required for small general office at Potters Bar, Middlesex, for Estate Development, Private Housing, and Industrial work. Salary offered, about £500 p.a. Details of age and experience to Booth and Booth, Leighton House, Potters Bar, Middlesex. 4875

ASSISTANT (Inter. standard) required for varied practice in Midlands County Town. Excellent opportunity for experience and responsibility. Bonus scheme. Box 4872.

ARCHITECTURAL ASSISTANTS, senior and junior, required in active Watford office. Scope and opportunities in varied and interesting work. 'Phone Watford 7296/7 or write Box 4876.

ARCHITECT'S ASSISTANT required. Salary £400-£600, plus. W. Leslie Jones, Great Missenden, Bucks. Write or 'phone G.M.2375 evening or 2306 day. 4972

ARCHITECTURAL ASSISTANTS required for busy Birmingham office for working and detailed drawings. Write, stating age, experience, salary required, etc. Box 4987.

BRISTOL Architects require JUNIOR ASSISTANT with at least 12 months' office experience. Apply, giving details of experience and salary required, to Messrs. Miles & Wills, 3, St. Pauls Road, Bristol, 8. 4986

ARCHITECTURAL ASSISTANT required in interesting and varied practice for work on schools, churches and commercial buildings. Salary according to qualifications and experience within the range £500—£600. Apply giving details to: Burles & Newton, A.A.R.I.B.A., A.M.T.P.I., 35, John Street, Bloomsbury, London, W.C.1. 4994

JUNIOR DRAUGHTSMAN required by Schweppes, Ltd., in their Architect's office. Minimum of two years' practical experience, and able to develop small schemes with minimum supervision. Contributory Pension scheme. Canteen. 5-day week. Write, giving full particulars of experience, age, salary required, to Personnel Manager, 1/4, Connaught Place, London, W.2. 4954

N.C.B., SCOTTISH DIVISION.—Applications are invited for vacancies which exist in Edinburgh for ARCHITECTS, Grade II, £600×£25 to £650×£30 to £900. Applicants must be Associate Members of the R.I.B.A., and have had experience in the handling of large-scale contracts. The posts will be superannuable and the point of entry into salary scale will depend on the qualifications and experience of the successful applicants. Applications, stating age, qualifications, experience (in chronological order), present post and salary, should be forwarded to the Establishments Officer, 1, Eglinton Crescent, Edinburgh, 12, within 7 days. 4974

APPLICATIONS are invited for the post of SENIOR ARCHITECTURAL ASSISTANT in the London office of a large organisation. Applicants should have experience of large scale industrial and domestic development, possess initiative, energy and drive, and be first-class draughtsmen. The position is permanent and there are excellent prospects of advancement. Applicants should give details of experience, qualifications, previous and present employment, and state salary required. A vacancy also exists for an ARCHITECTURAL ASSISTANT with some experience of housing design and layout. For both appointments write to Box 4975.

ARCHITECTURAL ASSISTANTS wanted. Initial salary grading according to experience. Superannuation and profit-sharing schemes in operation. All applications treated in strict confidence. The Scottish Construction Co., Ltd., Sighthill Industrial Estate, Edinburgh, 11. 4960

ARCHITECTURAL ASSISTANTS required in West End Architect's office. Those studying for Inter. to Final R.I.B.A. Examination or qualified. Varied practice, specialising somewhat in factories, city offices and stores. Write, giving full particulars to Box. N.959, Willings, 362, Gray's Inn Road. W.C.1. 4963

ARCHITECTURAL DRAUGHTSMAN required for general country practice. Inter. standard and sound general experience essential. Knowledge of modern school construction an advantage. Salary and bonus according to experience. Reavell & Cahill, Alnwick, Northumberland. 4936

PROGRESSIVE young Cornish Architect requires experienced ASSISTANT of at least Inter. R.I.B.A. standard. Age not important. Congenial working conditions in pleasant country district—remuneration not high, but pension scheme offered and prospects good. Full particulars of past experience, age, and salary required, etc., to Box 4937.

JOHN WRIGHT requires an ASSISTANT, an ARCHITECT, with knowledge of luxury interior work, and with enough experience to carry a contract right through. Please reply to Box 4988.

ARCHITECTURAL ASSISTANTS and DRAUGHTSMEN, with general architectural experience, good knowledge of building construction, and capable of preparing working drawings and details under supervision, required for large scale industrial and commercial projects. Pension scheme in existence. Applications and names of two referees to: E. R. Collister and Associates, Chartered Architects and Consulting Engineers, Springfield Place, Chelmsford, Essex. 4939

TWO ARCHITECTURAL ASSISTANTS required in W.C.2 district. One qualified, preferably with office experience, and one Inter.-Final standard. Write, stating age, qualifications, and salary required, to Box 4949.

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Building Surveyors' Section (Including Municipal): Intermediate grade. Final grade (Parts I and II). Direct Final grade.

Land Surveyors' Section: Intermediate grade. Final grade. Direct Final grade.

Fire Surveyors' Section: Direct Associate grade (Parts I and II).

The examinations will be held in London, and at selected provincial centres. Applications from candidates for permission to sit, made on the prescribed form, must be received not later than Monday, 28th February, 1955.

Full information on application to the General Secretary, I.A.A.S., 75, Eaton Place, London, S.W.1. 4946

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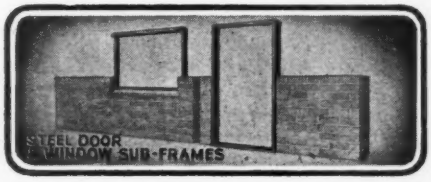
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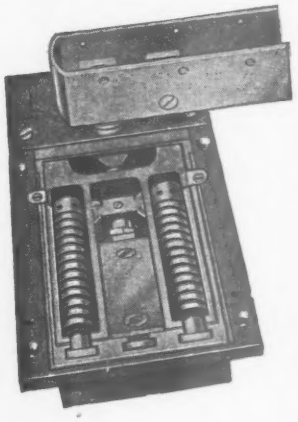
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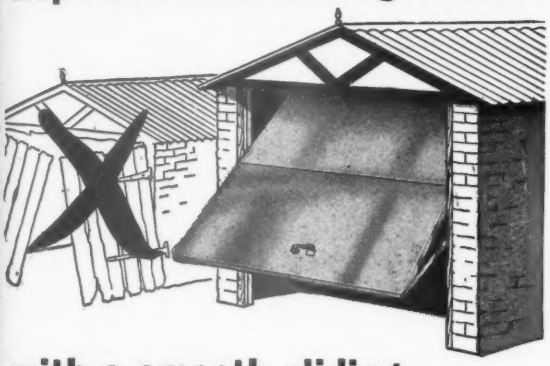
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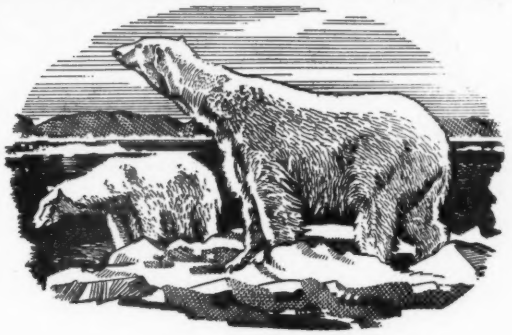
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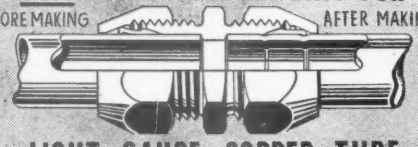
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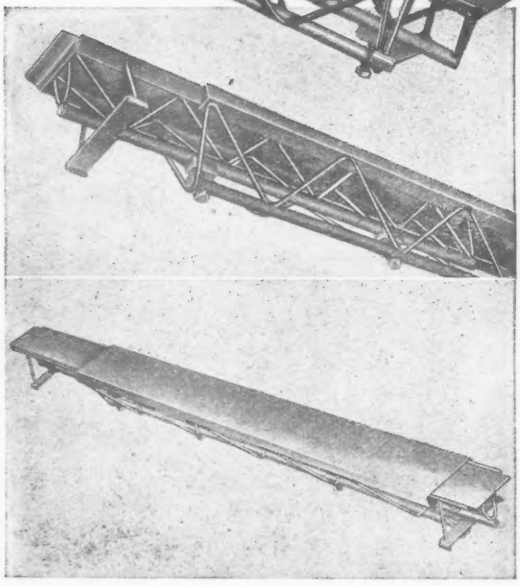
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